

# INDUSTRIAL-ARTS MAGAZINE

Incorporating: HANDICRAFT and the ARTS AND CRAFTS MAGAZINE

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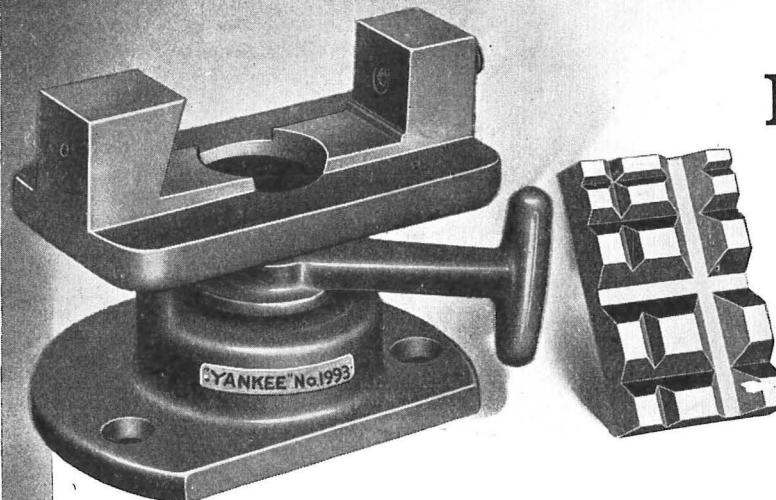
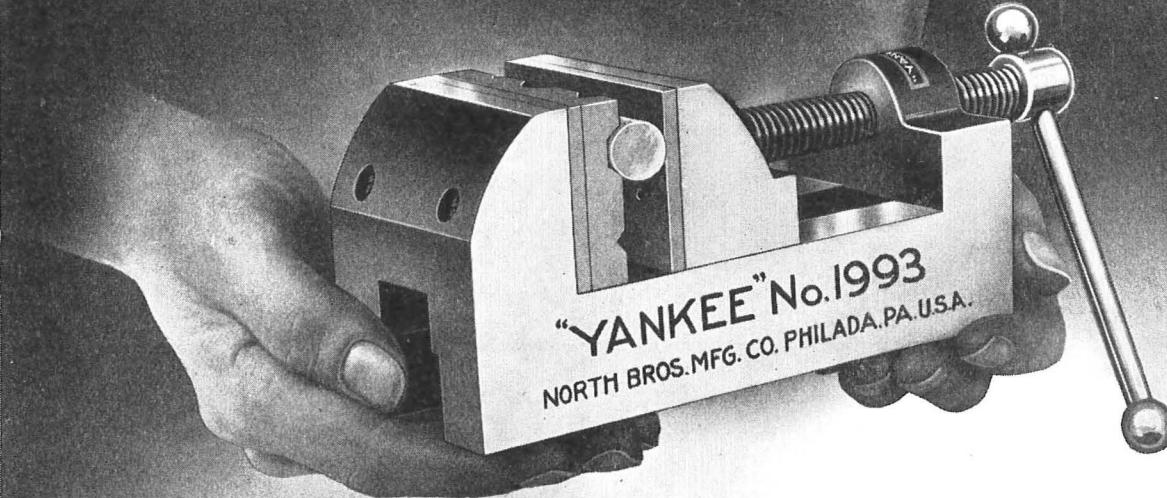
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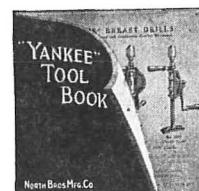
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# "YANKEE" TOOLS

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## THE POSSIBILITIES FOR EVENING SCHOOL INDUSTRIAL CLASSES UNDER THE SMITH-HUGHES ACT

James R. Coxen, State Director for Vocational Education in Wyoming

### I. General Statement.

N evening school class, as defined by the Federal Board for Vocational Education, is one which is held outside of the regular working hours of the individual. An evening school class is essentially a continuation school class—one where the education of a worker is continued—and is defined in this way in order to make clear the difference between it and that other type of continuation class—the part-time class. A class held from 9 A. M. to 11 A. M. may be an “evening class” for a man who is working on a night shift, while a class meeting from 7 P. M. to 9 P. M. would not be an evening class.

Under the provisions of the Smith-Hughes Act evening classes in trade and industrial subjects may be organized for one group of persons only—those over 16 years of age who have already entered upon industrial employment. Even to persons within this group the kind of work which may be offered is limited to “that which is supplemental to the daily employment.” One of the chief sources of criticism of the act is this provision. Many persons say that the law offers no help to the worker who has made the wrong choice of a vocation because it gives him no opportunity to prepare for a new one; it compels him to stay in the groove where he has unfortunately been placed. Some rather prominent educators have condemned the act, not because of the benefits which it does provide, but because it was not so framed as to offer similar opportunities to other groups. It is not the purpose of this article to defend the provisions of the Smith-Hughes Act, but it may be pointed out that the task of securing training for a new industrial occupation thru an evening school class is one that is almost impossible. Those workers to whom the benefits of the act are offered will certainly be greatly helped, while other groups are certainly in no worse condition than before. Furthermore the interpretation of the term “supplemental” is so liberal that practically every industrial worker who has a common school education now has an opportunity to get training that will help him to be most efficient. Instruction which is “supplemental” has been interpreted to mean instruction in any subject which “will increase skill or knowledge in the occupation in which the worker is engaged as his daily employment, or as will lead to promotion or advancement in that work.”

In addition to the restrictions already stated there are two others which apply to evening classes. One is that the work offered must be under public supervision and control. This does not mean that assistance in organizing and conducting such classes may not be secured from the trades and industries, but only that since this is a public educational problem the educational authorities must be in charge. The other condition is that the work offered must be of less than college grade. This does not exclude work which may be similar to some which is offered in colleges, but only that workers who wish to profit by such courses need not necessarily be able to satisfy college entrance requirements. A course in machine drawing offered in an evening class might be more advanced than some of the courses offered in an engineering college yet still be taken by many workmen with only a common school education. The only requirement, other than age and industrial employment, for entering an evening school class should be a test to determine the ability to do the work outlined, and the determination of this ability should not depend on the previous schooling of the candidate.

### II. Some Facts to Consider in Establishing Evening Classes.

In considering the establishment of evening school classes there are a number of essential factors which are involved. Some of these are discussed in a general way in the following paragraphs. They are as follows:

1. *An evening class should be organized only to meet some real needs among the trade and industrial workers of the community.* Too often such class is started because of a desire to “do something” without any very definite knowledge of what should be done. It should not be understood, however, that these needs are always apparent. Very often they are discovered only after a thoro study of the occupations. Men engaged in trade and industrial work cannot express a need for education when they do not realize what education can do to help them. Persistence is often required before the real possibilities of a situation are learned. A personal experience will show the situation that frequently exists. In conference with a number of mining officials a question was asked as to what education could do for the miners in the employ of the company. The reply was that the schools could do nothing to help their men, as miners. They were then asked as to the

chances which the ordinary miner had for advancement; whether a drill runner could advance to a position as fire boss or mine foreman. The answer was "No, he does not know enough about mining to perform the duties of those positions and his daily occupation gives no opportunity to acquire such knowledge." Then when a course was suggested dealing with mathematics, ventilation, formation of gases, operation of mining machinery, etc., they agreed that a need did exist and encouraged the organization of an evening class offering such work. In attempting to learn the needs of the workers probably no better plan can be found than that of securing an advisory committee of from three to five members. These members should be men who have a thoro knowledge of the vocations for which training is contemplated, and the membership should include not only officials, but workers who realize their own needs and are making an effort to satisfy them. Men who have secured promotion by means of correspondence courses can often be of great assistance in planning the work, for they realize exactly what the schools have done for them. Foremen and superintendents can give information as to the points on which the workers are most deficient, and the common workmen can tell of the many things they do without any knowledge of the cause or effect. The formation of such a committee will assist in meeting the real needs of the workers and it will also help to secure their interest and attendance.

*2. The work in an evening class must be organized so that the particular instruction needed by workers is available.* An evening school course can hardly be organized in the same way as the work of an all-day school. The people who attend an evening class are those who have finished a day's work; they are tired and may wish to use their leisure time for recreation. Their attendance will be continuous only if they get work which they want at each session. A machinist who works for eight hours per day at a planer will probably not be willing to attend an evening class in general machine practice for 25 weeks in order to secure, at some time during the course, instruction in the use of a universal grinder. He will, however, gladly attend a six-weeks' course devoted entirely to instruction in the use of the grinder, for that may be exactly the work which he most needs.

A course in millinery of indefinite length was organized last winter in a western city. The teacher of the class was a skilled vocational worker and for a time the class record showed almost perfect attendance. Then after each member of the class had made a hat, the attendance ceased and it was necessary to discontinue the class. The school superintendent was much disgusted until someone asked, "Why should they continue? They got what they wanted," and then he saw that the purpose of the class had been largely realized.

If the work offered in the evening school classes

can be organized into distinct units it seems certain that much better results will be secured than can be obtained in any other way. This does not eliminate the possibility of arranging a continuous course of instruction for one year, two years, or any length of time. The units may be combined in any way desired, but much more careful attention must be given to the organization of the matter to be taught. Such a plan—the organization of the work in distinct units—may also have a helpful psychological influence on attendance. If a person enrolls in a course extending over 30 weeks, he may become discouraged in six or eight weeks because he has accomplished such a small part of the whole work. If, however, after six weeks he can feel that he has already completed one distinct unit the tendency will be to continue with another.

*3. The selection of a teacher is perhaps the most important factor in the successful organization of an evening class.* It may be said that there are two items which are essential in the make-up of a successful industrial teacher: First, a thoro knowledge of the subjects which he is to teach, and their relation to the occupations of the men in the class; and second, ability to organize the subject matter for teaching purposes. It has often been stated that teachers of evening school classes must be industrial workers, but such a broad statement can hardly be justified. Two distinct elements can be recognized as characteristics of an industrial worker and both of these may be acquired, to some extent, in an evening school class. One of these elements is technical skill—the ability to perform certain mechanical operations considered apart from a knowledge of the reasons for doing them, or their relations to other operations. The other element is knowledge—organized information about the work to be done considered apart from the ability to perform the mechanical operations. On this basis we may then recognize the need for two kinds of industrial teachers—those who have the necessary technical skill, and those who have the necessary knowledge. There is little doubt but that the person who possesses both of these qualifications, together with teaching ability, will be the best selection for a teaching position. However, such men are scarce. The worker who possesses that element—skill or knowledge—which the evening class aims to promote should be selected as the most likely teaching candidate. The class where the acquisition of technical skill is the principal purpose should certainly be taught by an industrial worker who himself has that skill, but a class where knowledge—unrelated to skill—is the thing sought should be taught by one who has that knowledge even tho he is not an industrial worker. In selecting such a teacher care should always be taken to get one who understands the work which is being done by the men in the class as well as the relation which his subject bears to their work. For example, in organizing a class in architectural drawing for carpenters, it is very probable that an

architect, rather than a carpenter, will be the best selection for a teacher. In selecting an architect, however, care must be taken to secure one who has been out on the job—inspecting and supervising real construction work—enough to know working conditions, rather than an office man who draws plans and has little knowledge of the duties of the workmen.

The other consideration in the selection of a teacher for an evening school class is his ability to organize his subject for teaching purposes. This is an essential in any kind of teaching work, but is even more important where unit courses are presented. Very often, the teacher may have a thoro knowledge of his subject yet fail as a teacher because he fails to recognize the peculiar needs of his pupils and because he does not present the different parts of his subject in logical sequence, and with the proper emphasis. No one can teach, successfully, things of which he has no knowledge, yet frequently an amateur with only a limited knowledge and the ability to put that knowledge in teachable form will give better instruction than the expert worker who presents facts as they may happen to occur to him. Probably the best teacher will be secured in one of two ways: First, by securing a worker who has had teaching experience, or second, by securing a worker with something more than a common school education and furnishing him with training in the problems of teaching. The number of men who have had teaching experience before entering industry is much greater than at first supposed, especially in the western states.

One other point that must be considered in the selection of a teacher is his character and personality. He must stand well among his fellow workers and must have their respect and confidence. He must be interested in their problems and must realize that his duty to the school is not confined to a few hours of class work each week. Many vocational teachers fail because they are not willing to spend the necessary time to properly prepare for their class work.

4. *Evening school classes can be held for only a small number of hours per week.* These classes are held, it must be remembered, during the leisure periods of the worker and they must compete with other claimants for this limited amount of time. With most evening school work, just as with day school work, some time must be allowed for the preparation of lessons. This time will, in most cases, be at least equal to the time spent in class. A rather common practice is to hold classes on alternate nights—Monday, Wednesday, and Friday, or Tuesday and Thursday. This gives the other evenings for the preparation of lessons and for recreation. If the subjects are those which require no preparation or work outside of the classroom there would be no real objections to holding classes on consecutive nights, but there are few subjects that should not require some preparation, reading or thought to supplement the classroom instruction. Even those classes whose

primary purpose is to increase the technical skill of the worker can hardly be given without some outside reading and study.

The length of each evening school session will be governed by the kind of work being done. In those subjects designed to increase the skill of the worker the amount of practice necessary will be relatively large and from two to two and one-half hours for each meeting of the class will not be too much. In other subjects, where the acquisition of knowledge is the chief aim, the class sessions need not extend over more than one hour, and two classes could easily be held on the same evening. It is well, however, in such classes to make provision for conferences with the pupils. Such a conference period, held before or after the class session, will increase slightly the employment period of the teacher. It may be stated that, as a general rule, evening classes should not be in session more than six hours per week, while four or five hours will come nearer meeting the wishes of most working men. Satisfactory class work is seldom done during the warmer months, so classes conducted for from 25 to 30 weeks per year will probably render the maximum service.

5. *The methods used in evening school classes can not be copied from those used in day school classes.* The members of day school classes have ample time to secure a wide general knowledge about all parts of an industrial occupation, while evening school pupils have only a limited amount of time and are usually interested in securing specific information about one or more definite parts of an industry. For that reason the methods in evening classes must be different; teachers must deal with a relatively small number of closely related facts, rather than a large number dealing with many different parts of an occupation. The characteristics of the pupils will also alter the methods greatly. The evening school class is conducted only to provide employment supplemental to the daily occupation, so the members of the class all have a common groundwork of information on which to build. Many elementary matters which are necessarily dealt with in an all-day school need not be considered in an evening class. To go into matters already known to the members of the class is a useless waste of valuable time and will result in the loss of the interest and attendance of the pupil. As was stated before, one of the first things to consider is the need of the pupil. The methods used must always be such as will help to satisfy the needs. If the members of the class all have about the same preparation and experience the work of the teacher is made more simple. In most cases the classes are pretty thoroly mixed and much individual work is needed to secure the best results. In classes organized primarily for the promotion of skill the teaching must necessarily be largely of this nature. In classes for related subjects, where imparting knowledge is the chief aim, this is more difficult. In

such cases short conference periods will do much to help solve the individual problems of the students. Many of them, especially mature men, do not care to "show their ignorance" by asking questions in class. A few minutes spent in an individual conference will often be of more help in clearing up difficult points than several recitation periods. The recitations are necessarily more informal than in ordinary school classes. The men may learn as much from a free discussion of their own ideas as from the work of the teacher and a free exchange of opinion and experience is to be desired. Then, too, much benefit will be secured from practice in making accurate statements of facts related to the work. Such statements require careful thought, and clear, careful thinking about his daily occupation is certainly to be encouraged in every worker.

6. *The cost of maintaining evening classes is relatively low.* The item of cost which is first considered is the salary of the teacher. It is possible in most places and for most classes to secure competent teachers at from \$1.00 to \$1.50 per hour of class duty. If we assume the higher figure as the cost, that item for a class which meets two hours each night, two nights per week for 30 weeks would be only \$180. Of this amount one-half, or \$90, may be secured as reimbursement from the federal government under the provisions of the Smith-Hughes Act, thus leaving \$90 as the cost to the community for that item. To this must, of course, be added the other items such as heat, light, janitor service, power and materials. The three first will be relatively light and in most places the first one need not be considered, especially if the public school buildings are used for the evening classes. The lights for the average class will not cost more than twenty-five cents per evening or \$15 for the year. Assume \$1 per room per night as the cost of the extra janitor service necessary and the cost of the class is increased by \$60. The total of the items considered thus far is \$165. If only fifteen men are enrolled in

the class this will mean a cost of only \$11 each for the school year. In most places the cost is considerably less than this because of the various charges being less than the estimate here given.

In classes where machinery is needed and materials are used additional expense will be incurred, depending on the courses offered and the number of pupils in the classes. In this connection it may be stated that in the opinion of many persons at least a part of the cost of materials should be paid by the students. This will tend to discourage extravagance and will make the cost of many courses much smaller than they would otherwise be. Even tho the cost can easily be borne by the school there should be a charge to the student which bears a definite relation to the amount of materials used.

Many school people also advocate a tuition charge for all evening classes, giving the following arguments for such a practice:

1. Working men, like all other people, value lightly those things which cost nothing. If they feel that they are paying for their school work, they will give it more attention than if it is free.

2. The payment of a tuition fee, even a small one, will result in keeping out of the class a number of persons who enroll on the spur of the moment with no real interest and whose subsequent withdrawals tend to demoralize the class.

3. Since such classes are to be of direct benefit to those attending, they should be willing to bear at least a part of the cost.

4. In many cases the schools can not afford to bear the entire cost of many classes, so that by charging tuition it is possible to extend such benefits to more persons. A plan that has been successfully carried out in many cases is that of refunding all or a part of the tuition fee to all pupils who have attended 80% of the sessions of the class. This would seem to encourage the attendance of those enrolled without discouraging the earnest workers by the tuition cost.



A PATRIOTIC POSTER.

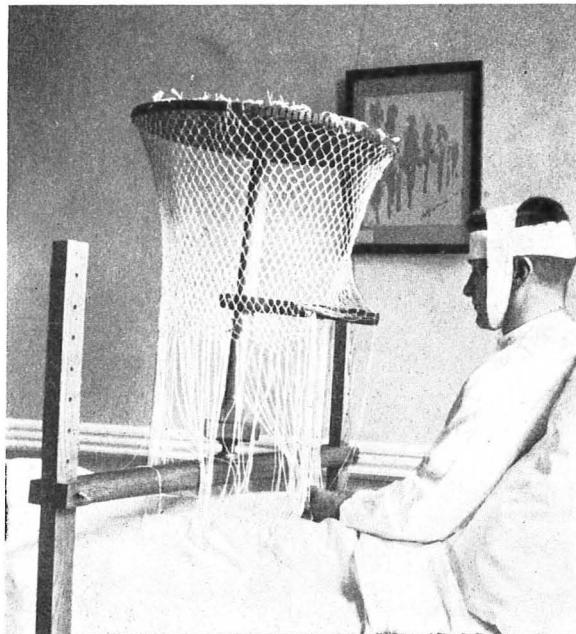
The illustration above is reproduced from a patriotic poster painted by Lawrence Blinks, a senior student in the high school, Kalamazoo, Mich. The poster was one of some six hundred prepared for the recent War Savings drive under the general direction of Miss Beula M. Wadsworth, Supervisor of Art in the Kalamazoo schools.

# Equipment for the Bedside Occupation of Men

Louis J. Haas, Director of Men's Occupations, Bloomingdale Hospital, White Plains, N. Y.

(Concluded from October issue)

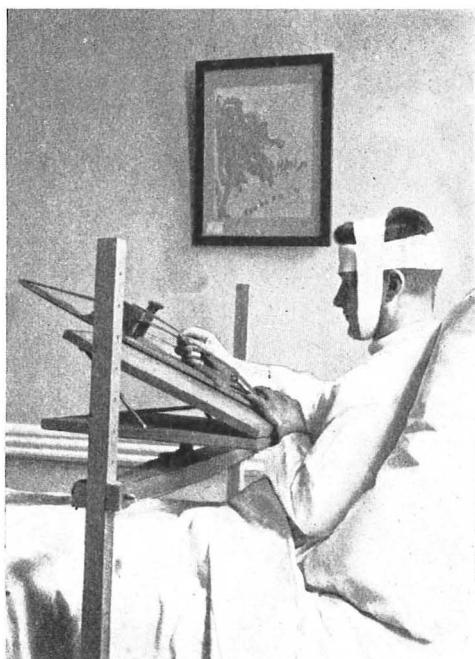
While working along these lines, we found it desirable to make bags for the use of the laundry and looked about for some better way to produce than by the old mesh stick method. At first, we thought that, by some readjustment of our tennis net bed loom, this might be made possible. We were considering the possibility of interchangeable rollers and mesh stick-bars, designed to produce the smaller meshes, when an idea of using an old but simple knot in a new way made possible a simpler method that produced a seamless tube of meshes. This idea brought into existence the circular netting loom shown in the photographs and working drawings. We found that with the use of a short standard, in place of the floor standard, this loom can be easily attached to the bed stand for use as bed side occupation. The revolving circular form of this loom contains about 140 saw cuts in its edge. It is in these saw cuts that the warp is hung when the loom is set up. It will be noted that after these saw cuts were made, a 3-16" drill was run into the center of each saw cut. This was done to take care of the intersecting knots, in case it was desired to raise the net up during the process of construction. The warp is cut 12 inches longer than twice the length of the bag to be made. It is hung in place to form two threads as shown in the drawing. The first complete row of knots is tied without the aid of the mesh stick arm. The rest are tied one after the other over this mesh stick arm, which can easily be adjusted to any desired height, while the top of the loom revolves to bring the work



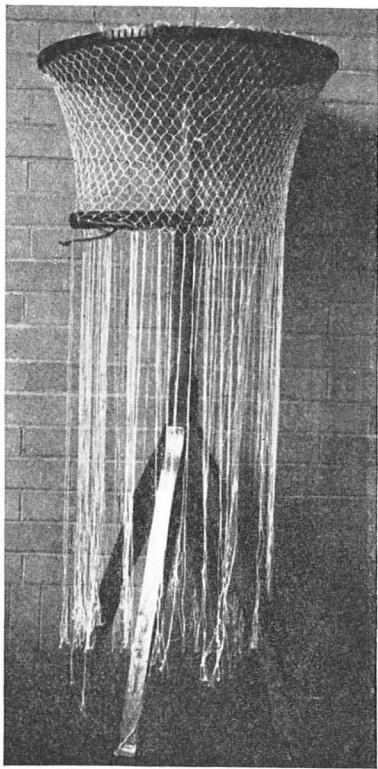
Ill. 7. Patient Making Laundry Bag.

into position as desired. The cross arm is used to keep all threads but the two being knotted out of the worker's way. The drawings show how one row of meshes divides the two threads of each adjoining mesh to form the particular mesh in its row as it is knotted around the mesh stick. When the proper depth is secured enough cord will remain of each string to tie across and close the bottom. This loom can be used to make crab nets, basket ball nets or other small nets which are circular in form. The size of the revolving circular form can be made to suit the work in hand, and the meshes can be varied in size by the spacing of the cuts in the edge of these disks, or by skipping every other cut. This would require for successful results that the mesh stick arms be made in length to suit the size of the different circular forms and be in section proportioned to suit the size of meshes that it is desired to make.

The problem of making chair caning possible as a bed-side occupation proved more difficult than was expected. And while the final solution of the problem looks simple, many ideas were carefully worked out only to be discarded as utterly impracticable and worthless. It was only when we were ready to give up as impossible the problems of designing a piece of equipment that would meet this need that the idea of a three-point contact clamp was suggested. This clamp will hold equally well all shapes of sets or panels to be caned. Its construction is such that the worker can easily get around or under the frame he is caning, using one hand beneath and the other hand above the seat with equal ease and no unnecessary reaching.



Ill. 6. Patient Weaving Necktie.



ILL. 7a. Laundry Bag on Circular Netting Loom.

Waste baskets, caned panels, book ends, the ends and doors of small bookcases and caned serving trays have been made by patients with this piece of equipment. The woodwork for such problems makes the most interesting occupation possible for patients that are able to go to the occupational shops where carpentry is carried on.

The desire of a patient to make for himself several neckties and belts upon a larger loom gave the inspiration which finally produced the necktie and belt

loom shown in the drawings. It was evident that men cared to weave these things for their own use instead of scarfs and bags. We soon realized that a perfect tie or belt was difficult to produce on a large loom, and finally the small loom took form. In its design every effort was made to eliminate unnecessary parts, so as to keep it light and simple with little to get out of order. How well we succeeded may be seen. The loom consists of three separate parts only, and weighs with the warp in place only twelve ounces.

The reed units are made up of eighteen or sixteen-gauge brass wire which has been passed thru an oblong draw plate or plate mills, such as are found in any silversmith's shop, until flattened to between one-thirty-second and one-sixty-fourth of an inch thick, but retaining its original width. A section of the wire after rolling would measure one-sixteenth by one-sixty-fourth of an inch. The wire is cut into lengths and placed on the charcoal block in pairs, edge up between the pins. The space between the wires may be anywhere from three-sixty-fourths of an inch to one-sixteenth of an inch. The eyes are formed with soft solder as shown in the illustrations. With a toothpick place just the smallest bit of "nokorode" soldering paste between the wires at the places to be soldered. Then place a flat pallion of soft solder at the points to be soldered, apply the flame a second until the solder flushes and the reed unit is completed.

The rest of the construction of the reed is clearly explained by the drawings. The reed rails are made of white wood. A chip of wood three-quarters of an inch long, the width of the rails, and one-sixteenth of an inch thick is wound in place, as shown, to form the space into which the reed units fit between the bottom rails. The rails are wound with a heavy waxed

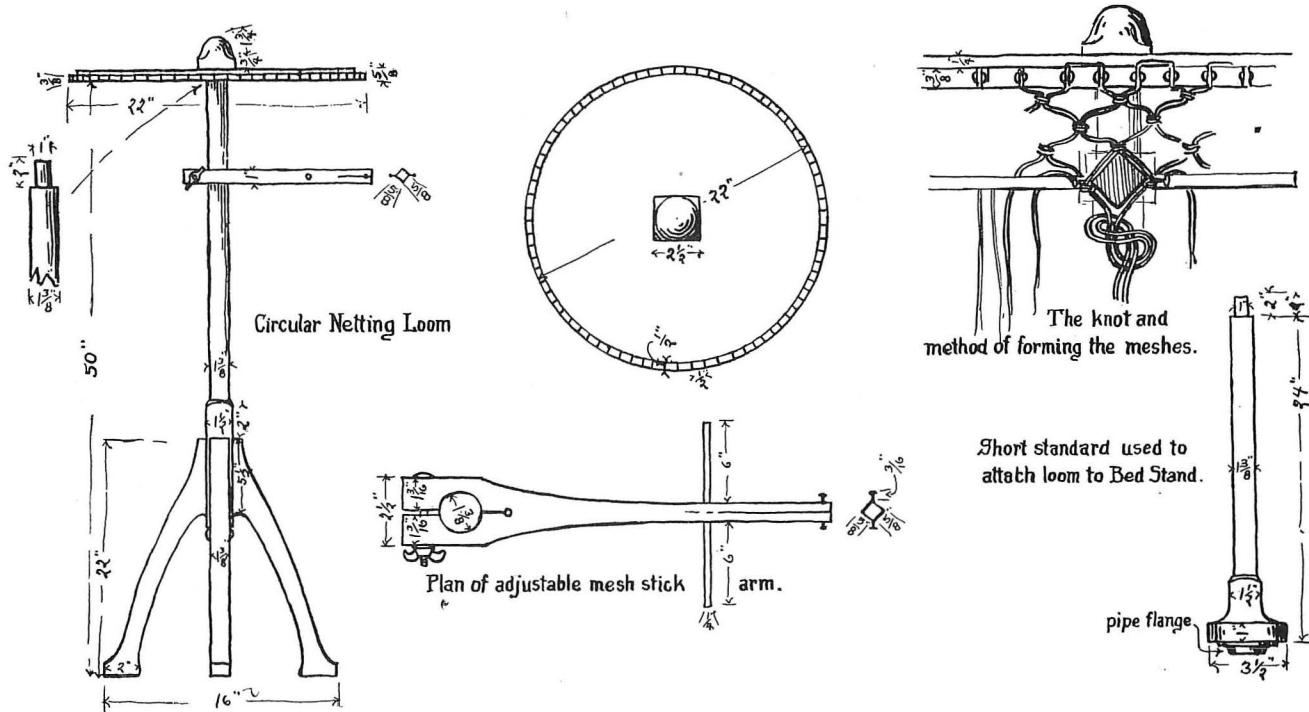
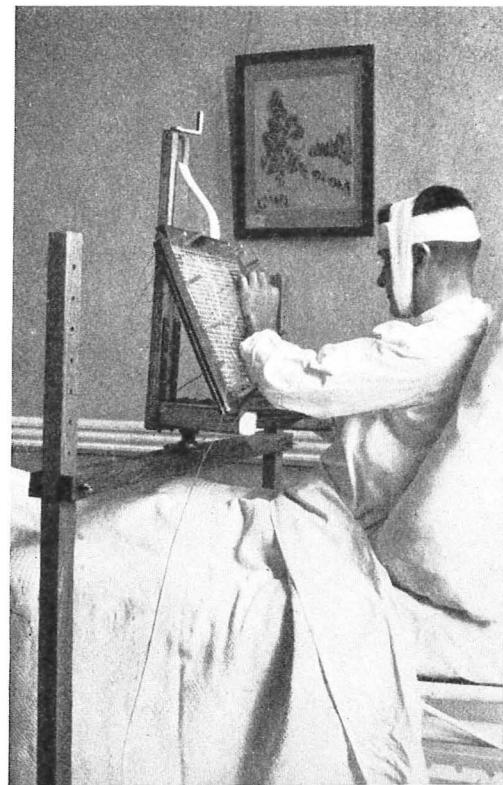


FIG. 4. DETAILS OF CIRCULAR NETTING LOOM.

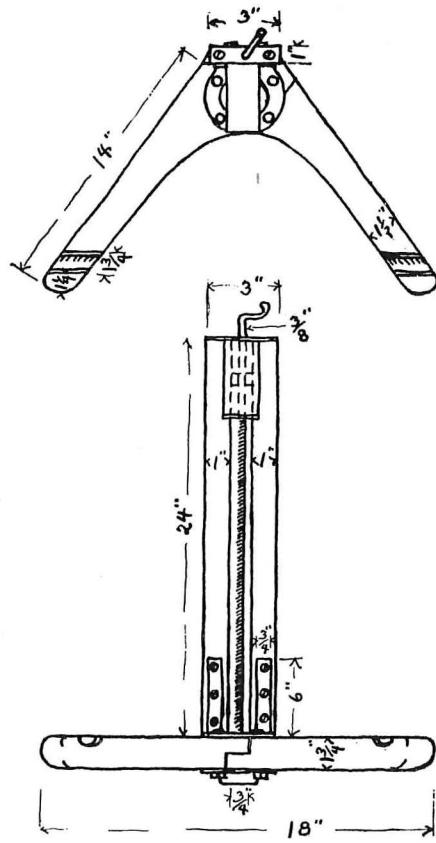
linen thread. Two wrappings of thread go between the two wires of a single unit, and two threads follow each unit to form the correct space between it and the next reed unit. On the absolute perfection of the winding depends the spacing and usefulness of the reed. After all the reed units are wound in place between the bottom rails, another spacing chip is inserted and wound tightly in place. The thread is fastened and ended as shown. Now, the top rails are wound in place. It is obvious that the spacing chip is not needed here, as the rails only have to extend but an eighth of an inch beyond the reed. When the winding is done the rails are given two coats of shellac. When this is dry, cut off any surplus length of reed units extending beyond the top and bottom rails. Use a fine metal saw, taking care to clear the wound rails by about a thirty-second of an inch, lest the linen thread be cut. The making of the wooden frame of the loom needs no explanation. Whitewood seems quite satisfactory for its construction. The warp link can be made of any stiff metal, possibly number 18-gauge brass or copper being the best. We make the shuttles of zinc, because this metal has just stiffness enough for this use. It is not stiff enough to make its pointed shape dangerous—something to be worried about, should the shuttle be in the hands of one who is a bit despondent. The point of the shuttle is required in all pattern work, and it is by means of it that the worker counts out his pattern.

The loom is set up in the following manner: First take a heavy thread and lace up one side of the



Ill. 8. Chair Caning Bed Clamp in Use at the Bedside.

warp link as shown in the drawing. The side to be laced has eleven holes along its edge. The two parts of the link are tied together with a very strong thread and are thumb-tacked in place upon the hinged sup-



A Chair Caning Bed Clamp  
for use with the bed stand.

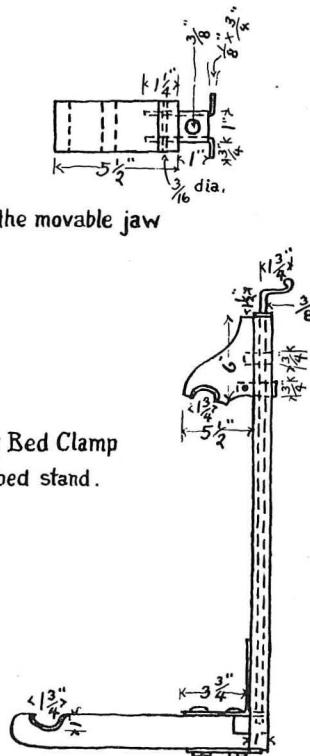


Fig. 5. Details of Chair Caning Bed Clamp with modifications which any teacher can make.  
This clamp is useful in any school shop.

port, with the laced part of the link facing the reed. The reed is placed in the upper notches of its supports and is tied in place, thus leaving both the worker's hands free for use in threading up the warp. The warp is measured and threaded up thus: Cut ten threads, nine feet, six inches long; bring their ends together and slide the thread thru the fingers until the middle is reached. Take one of these threads by the middle and pass this loop thru the loop formed by the lacing at one end of the warp link. Bring the loop and ends of the thread together and you have four threads long enough to go completely around the

reed thus, until the loom is completely set up. It will be noted that each upper thread passes around the lacing and becomes the corresponding lower thread. The weaving is started right up against this lacing and thus is bound between these loops of the warp, forming a selvage across the end. It is only at the final end of the tie that the threads must be darned in with the needle to form a selvage. When the tie is completed the lacing in the warp link is carefully cut and the thread is carefully pulled out, leaving a perfect selvage across the width of the tie.

As the weaving proceeds and it becomes neces-

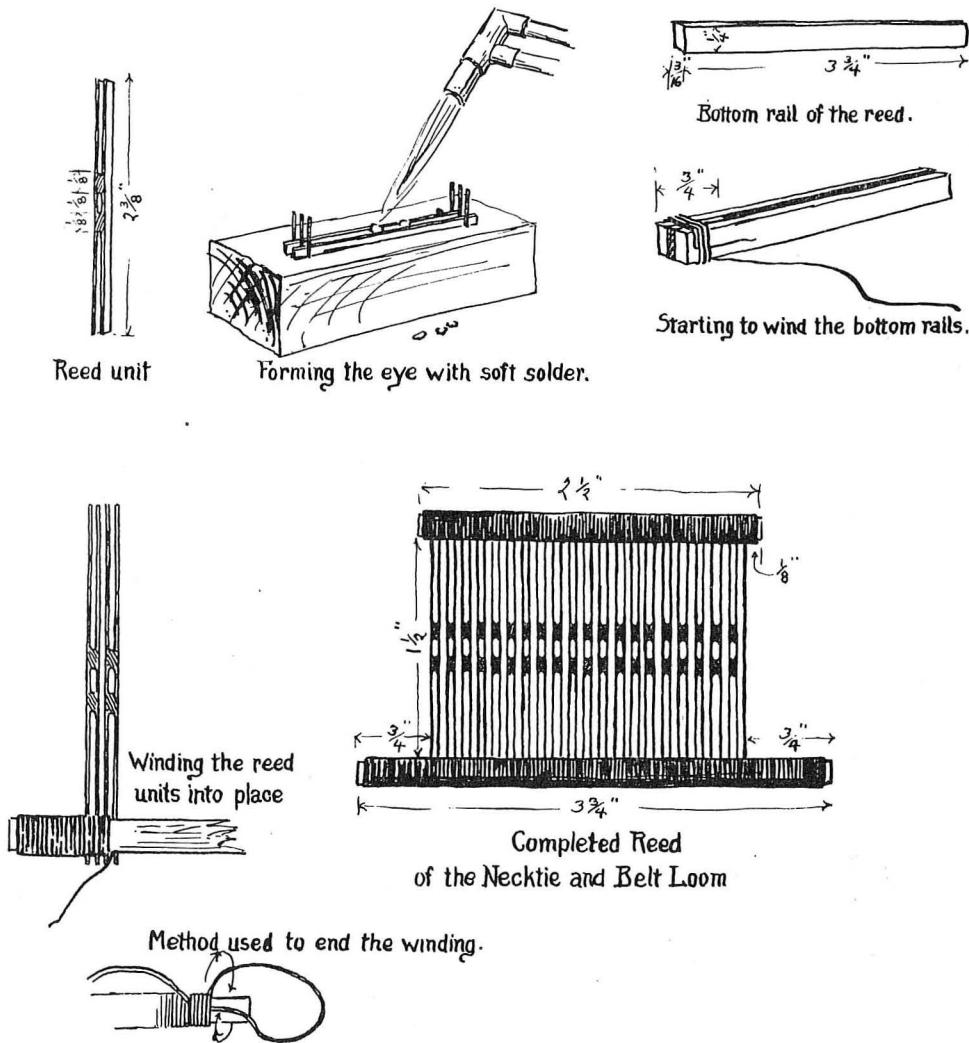
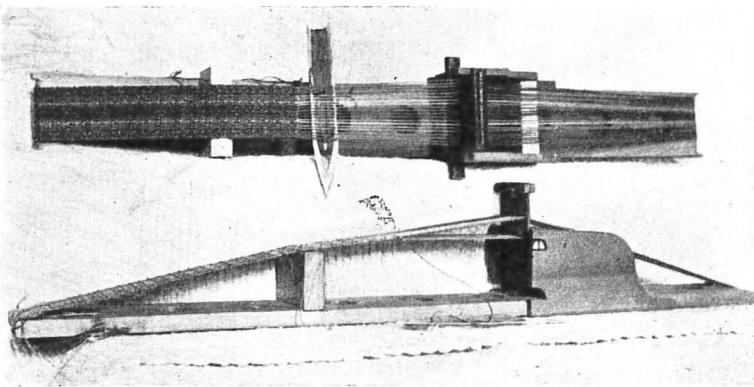


FIG. 6. DETAILS OF REED FOR NECKTIE LOOM.

loom and to tie at the other end into the link. When the loop ends are brought together, stretch and then cut the loop and thread up the four threads. The two threads that pass over the lacing in the warp link, go into the first two eyes in the reed, while the two threads that pass from under the lacing, are threaded into the spaces between the eyes in the reed just used by the upper threads. Now take the four threads around the loom without twisting or interchanging them much; pass two of them thru the hole on the other side of the warp link, and tie the four ends together, pulling the threads tightly to give good tension. Pro-

sary to do what amounts to winding up the finished product and unwinding fresh warp, all that is needed is to take firm hold of the warp link and pull. The tie and the warp link will then slip around the frame away from the reed, and the weaving may commence again. The two sheds are accomplished by placing the reed first in the upper and then in the lower notches of its supports. It will be seen that thus this simple reed, with the aid of the notches, performs satisfactorily the office of both heddle-frame and reed.

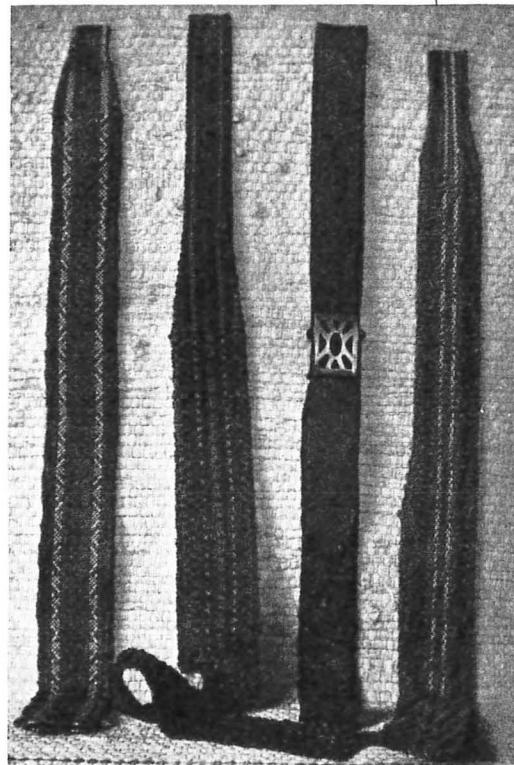
We found that few who had woven on the other



III. 9. Top and Side Views of the Necktie and Belt Loom.

small looms understood the way in which we narrowed the width of the weaving to form the neck of the tie. It is worth explaining, as the results are more satisfactory than the other methods suggested. When the tie proper is of sufficient length, pull the weaving around until only one-half inch of it extends toward the reed in front of the hinged support. First cut the outside warp thread on the left at the notch or front of the reed support. Take this thread and pass it thru the shed as if it were the woof, change the shed and bring it back again. Now, change the shed again and use the woof once. Then a warp thread is cut on the right edge at the same point, woven thru and back, followed by the woof. This cutting and weaving is repeated until eight warp threads on each side are eliminated and their ends are woven in as the narrowing proceeds. The tie has been narrowed sixteen threads by this method.

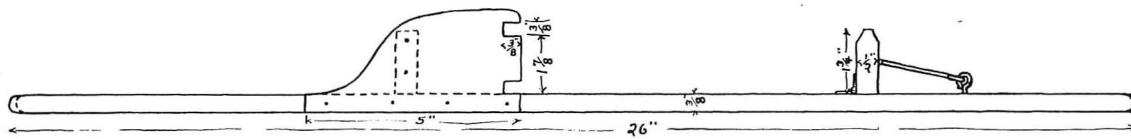
The weaving now proceeds as usual until the neck of the tie has attained sufficient length. The cut warp threads are simply tied in a bow and tucked in between the warp and the frame of the loom until needed. The tie is widened by just the reverse of the method used to narrow it for the neck. The last thread, cut out on the left, is rethreaded thru the reed and pulled taut. A piece of cord is tied at the point



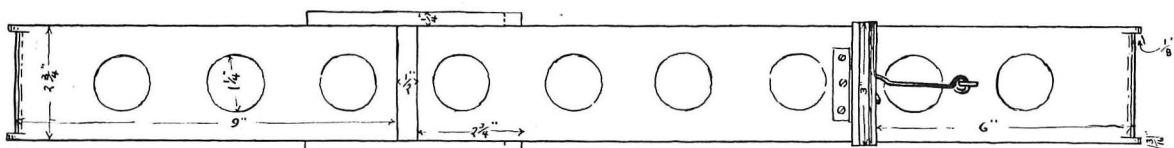
III. 10. Ties and Belt Woven on Loom.

reached by the weaving alongside of this warp thread. The added thread is now tied to a thumb tack placed in the hinged support. The surplus of the warp thread remaining loose beyond the knot, is woven thru and back. Then the woof is used once; then the last thread to be taken out on the right is threaded thru the reed and woven into place in the same manner. When thus, one after another, all of the sixteen threads have been added, the weaving proceeds, as it did before the tie was narrowed, until the weaving is finished.

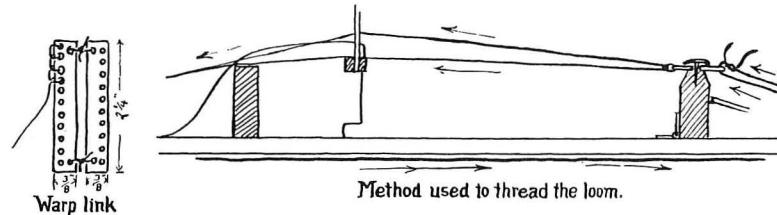
Now, every other thread of the warp must be darned back into the tie, three-eighths of an inch, to form a selvage across the width of this end of the tie.



The Necktie and Belt Loom

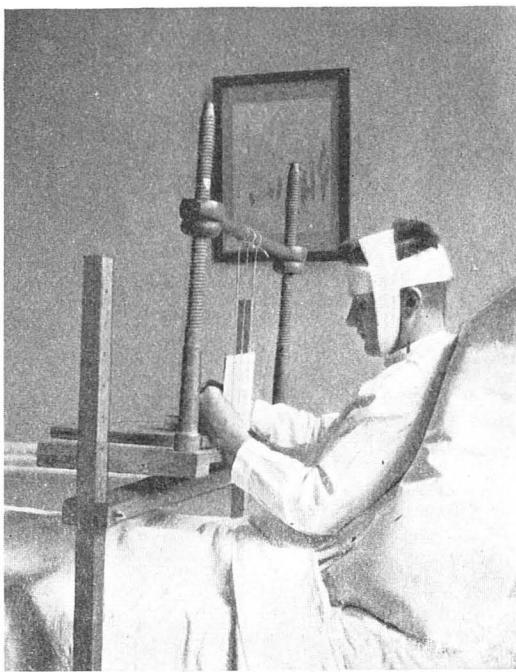


The shuttle



Method used to thread the loom.

FIG. 7. DETAILS OF NECKTIE AND BELT LOOM.



ILL. 11. Patient Sewing Book in Bed.

Finally, all thread ends are cut close and the tie is completed.

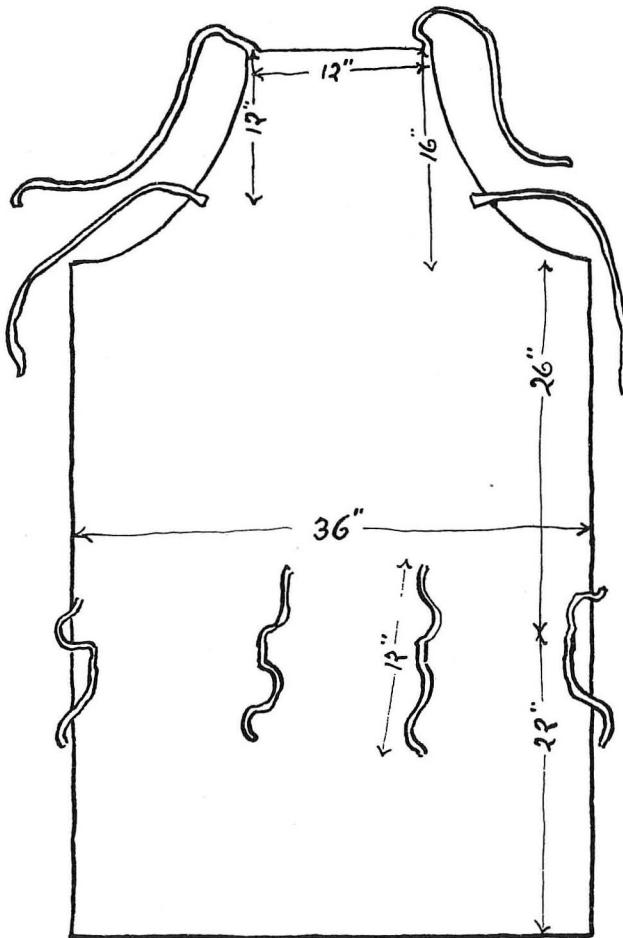
The sewing table or frame for sewing books was easily adapted. All that was necessary was to fasten a pipe flange beneath the middle of the table and it was ready to attach to the bed stand. No other changes are needed to make the standard form of sewing table serve the new purpose admirably. With the aid of the adjustable drawing table and a hand cutter, the book boards, cloth and end sheets can be cut. The pasting can also be done at this time. In fact the only part of simple bookbinding that cannot be done in bed is that which requires the use of a large press. The whole process of bookbinding would be made possible if patients who were able to be about took up those stages of the work which were impossible for the bed case to perform.

In the practice of brush making in bed, it will be noted that all of the usual equipment is readily attached to the closed adjustable tables without this equipment having to be modified in the least. A small iron vise serves the same purpose of the more elaborate means of holding the brush blocks while the bristles are being drawn. The reader may consult the previous article for details of brush block construction, method of drawing bristles and the finishing of blocks.

In all work, where it is necessary to prevent the bed clothes from becoming soiled, and the bed made untidy or uncomfortable by the bits of paper, reed, bristles, filings, sawdust or other results of work activity, a bed apron like the one illustrated is used. The apron is attached to the arm of the bed stand, with the attached tapes, passing under the man's work and fastening about his neck and shoulders with the tapes for this purpose. The apron catches everything that drops and when the work period is over it

may be folded up and taken away, carrying with it the odds and ends that would have otherwise fallen on the bed.

The writer appreciates that the questions will immediately be asked, How is such equipment to be produced, to meet this need? and, Is it not going to cost a great deal of money? The answer to both of these questions is found in the shops which will be designed to meet the need for Therapeutic Occupation and Vocational Rehabilitation. We have found that the making of accessories and equipment which make the work of some of our other occupations more possible, practicable, artistic and thus more helpful to those engaged, was the most satisfying form of occupation we could possibly give the men working in our carpentry, art metal and blacksmithing shops. It is evident, too, that at the same time, by meeting this local demand for equipment, one is making the problem of occupying certain classes of men much simpler, more instructive and also taking care of the problem of overhead and costs of materials in the most satisfactory way possible. The answer then to these questions is simply, complete co-operation between the three links of the chain, Bedside Occupation, Shop Occupation and Vocational Rehabilitation. It is certain that each link of the chain will benefit directly thru helping the other.



Pattern of the Bed Apron.

Fig. 8. Pattern for Bed Apron adapted especially for Bedside Occupations.

# WAR-TIME ACTIVITIES IN THE SCHOOLS

(Second Article)

Bonnie E. Snow and Hugo B. Froehlich

## Problem 4. A Patriotic Poster.

**T**HESE are the days of opportunity. Our soldier boys in camp are eagerly awaiting their "chance." They are impatient to be off and away; they are chafing at any delay that defers their entrance into the fight; they are anxious to take an active part in the great struggle which is to liberate mankind and establish democracy in the place of autocracy in Europe.

Every soldier who crosses the Atlantic finds his own chance and leaves an opportunity at home for someone to take his place and do his work. The world has work for all, for there are gigantic tasks to be accomplished, and each must give the best that he has. The schools must do their part. What service can they render? The question is put to them squarely. Art teachers are proud that they need not pass the question by, nor delegate to another the work that rightfully belongs to them. Posters are needed on every hand. Our billboards flame forth the nation's needs for men, for food, for ships, for money. Last year the children in school made a million posters. Some were good, many were poor, but all were full of the spirit of patriotism. This year more and better posters must be forthcoming, for our people have discovered their value in arousing public sentiment and in causing great waves of enthusiasm to sweep over the land. "One striking poster will stir more people than a thousand words of print."

Surely the art of poster making is a practical one, and the art departments in our schools must rise to the occasion.

As in all other phases of industrial art, poster designing has its educational beginning. We are never to transgress a law of design or of color harmony, even tho our problem be one within the capabilities of a first-grade child. Whatever we teach must be taught well. The shallow excuse that "it is only a second-grade class" cannot extenuate a poor composition, an unfortunate background, weak lettering nor discordant color. There are certain elements for which a teacher is responsible. The crude technique of little children is to be expected, but this has nothing to do with the violation of certain basic principles. The citation of a few of these may be of service.

First, as to backgrounds: Let us teach the



Fig. 1. A Patriotic Poster.

children that the background of the poster should be less intense in color than the shapes that are placed upon it. This leads to the interesting discussion of certain colors as "retreating," and of others as "advancing." Yellow, orange and red possess the quality of attraction. They arrest our attention wherever and whenever we see them. Any color or hue which contains yellow, orange or red, has attractive force in proportion to the amount it possesses of these penetrating and insistent colors. It is a well known fact that the hue we call red-orange can be seen farther than any other color. This will be useful for the children to know when they choose colors for their posters. What part of the poster do you desire to be seen first? Not the background, certainly.

Blue, violet, and certain qualities of green are classed as retreating colors. So are the neutral tones, or colors that are much grayed. In selecting back-

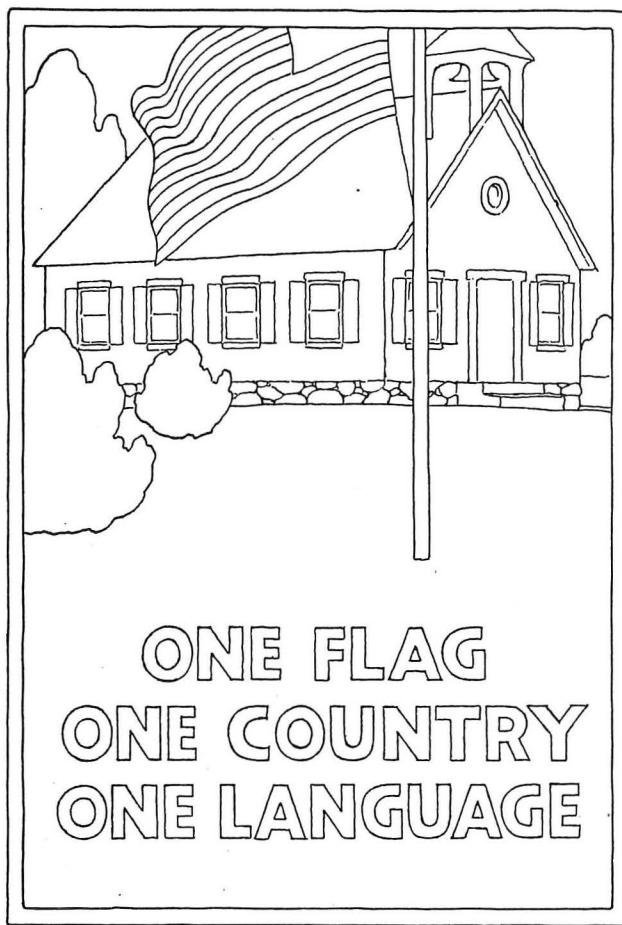


Fig. 2. The Preliminary Sketch for the Poster.

grounds, therefore, we should choose a color tone that in itself has the "retiring" quality. Many of the posters made in our schools last year would have been successful but for ignorance of this simple fact. Blue shapes were often placed upon backgrounds of intense orange, so that background shapes asserted themselves more strongly than the shapes of objects, letters, etc. The result was confusion. When the order was reversed, and orange shapes were seen upon blue backgrounds, the idea of the poster was clearly and forcefully expressed.

Neutral gray, in any value, black and white, are good background tones. So are neutralized or grayed tones of green, violet, blue, orange, yellow, etc., according to the color scheme employed.

Second, as to values: Let us teach the children, early, that strong contrasts of dark and light color tones will always attract the eye and call attention to that particular part of the design where these strong contrasts appear. White shapes upon black backgrounds, or black upon white, are often used, sometimes with no colors and sometimes with one or more intense colors. Similar effects may be produced by using light tints and dark shades of one color. Pale violet and dark violet used together give almost as much contrast as white and black. This is true in the use of tints and shades of any other color.

Again, we may use light yellow and normal or

dark violet together, or light red and dark green, or light orange and dark blue, thus varying our complementary harmonies. We may also use analogous colors in different tints and shades, securing in this way color quality as well as contrasts in dark and light.

Third, as to simplicity and directness of treatment: By "simple" treatment we mean that surfaces should not be modelled; roundness or any other quality of the surface of an object is to be ignored. In a poster, an apple, for example, is to be expressed in one flat shape of color with a strongly marked outline. This differs greatly from the usual drawing, painting or "picture" of an apple. A poster is not a picture, as we ordinarily use the word, and it is not to be treated in a pictorial manner. None of the technique so familiar to the art teacher who has struggled with the problems of representation in light and shade, is permissible in poster design.

A poster is not a representation. It is a symbol from which details and minor facts of appearance have been eliminated. For this reason the practice of cutting figures and other shapes from magazine covers and advertisements and introducing them bodily as part of poster compositions is absolutely wrong. As a general rule, the shapes are pictorial and unsuited for use in design. The reason usually given for doing this is that the children like it, and that more interesting results can be gotten in this way; but we must at no time countenance a method or a practice which would establish false standards in the minds of the children.

Whether a poster is painted or made of paper, all shapes are to be flat. Strong, pure colors, simple, flat shapes, and definitely marked outlines of objects are poster characteristics. Because of the comparative ease with which these effects are obtained with colored papers, this medium is commonly employed in elementary poster design. Beautiful color effects result from the use of the fine colored papers now on the market. Even experienced designers often substitute paper for paint, because of the quickness with which a stunning poster may be developed.

When for any reason paper is not desired as the medium, opaque water color is used. This is known by various names,—show card color, liquid tempera, calcimo, etc. Opaque is preferable to transparent color because of the ease with which flat tones are spread. Another advantage of the medium is that it can be used on either light or dark colored papers as backgrounds, as a wash "covers" the surface upon which it is spread. The smooth, velvety, even tone which results from the spreading of opaque color is impossible to obtain with transparent color. At a short distance, one could not tell whether a poster design was expressed with paper shapes or painted with opaque water color, so similar in results are these two mediums.

Fourth, as to color schemes: Posters offer a fine opportunity for expressing definite and obvious

color schemes. When that simplest of all color combinations is chosen,—black, white and one intense color—the effect is sure to be good, if these tones are used in correct proportions. To such a scheme, gray may often be added with advantage. The general rule is to use intense color in small areas, and neutral or gray tones in large areas, but this must always be governed by the "idea" of the poster in hand. What does it advertise or announce? To what part of the composition do we wish to call attention? How shall we do this? Sometimes by using a large mass of strong color, and sometimes by employing strong contrasts of light and dark. As we have said, tints and shades of one color will give us contrasts of values. There is another contrast which we frequently use,—the contrast of complementary colors, such as yellow and violet, red and green, blue and orange. These color complements used by themselves, or with black, white and gray, produce striking effects. One member of the complementary pair may appear in a grayed tone, as gray-blue for a background, with gray, black, white, and intense orange shapes placed upon it. The judicious use of black and white is quite sure to give character and "punch" to a poster. This is only another way of saying that the dark and light quality of a design is a most important element, for to a well-balanced composition of black and white, or of black, white and gray, may be added almost

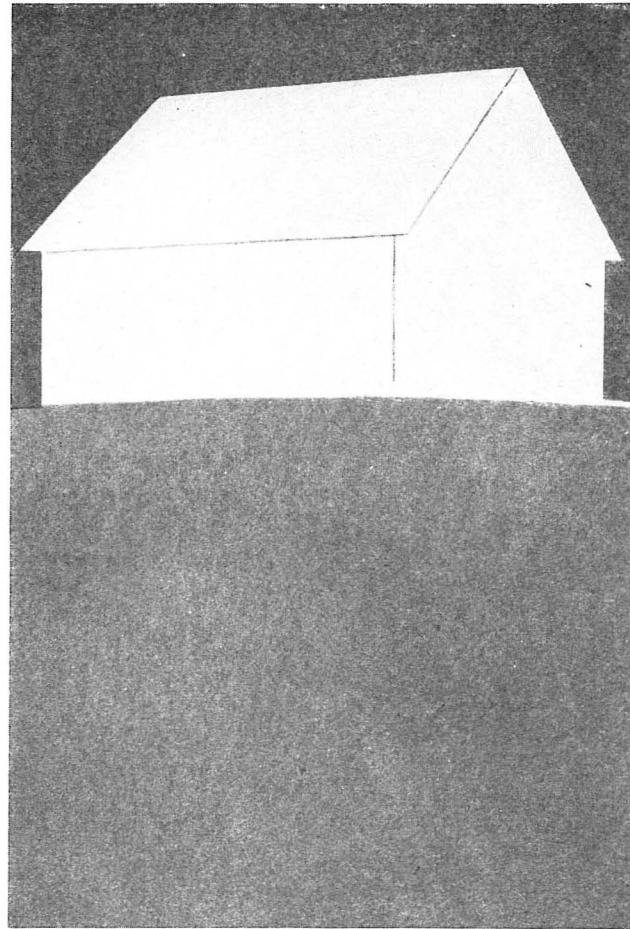


Fig. 3. Background, Foreground, and "Main Idea" expressed in Cut Paper Shapes.

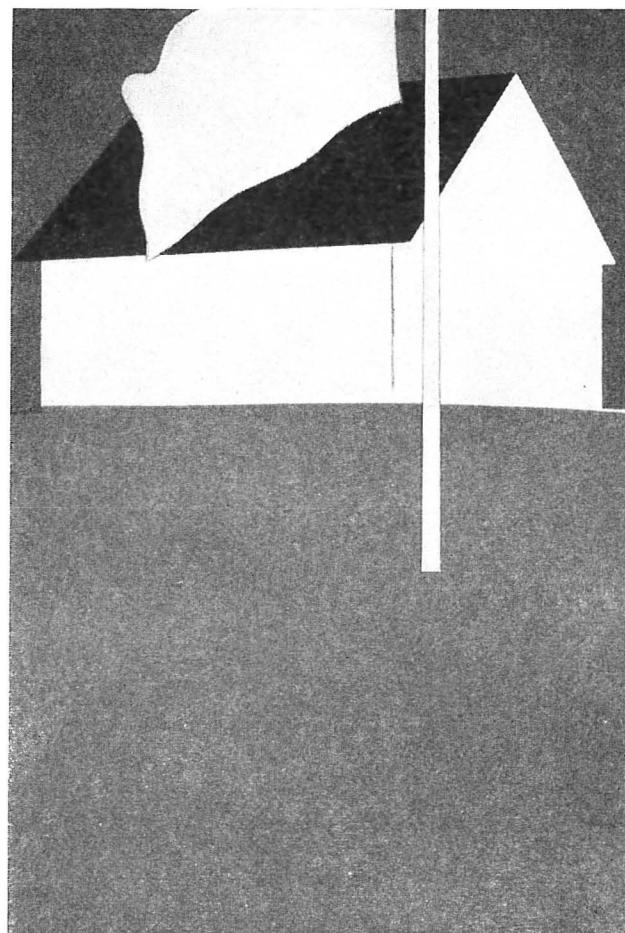


Fig. 4. More Paper Shapes added to the Poster.

any combination of colors. The neutral tones (black, white and gray) are the great balancers and harmonizers. Our students in school need to know more about them. They may be used with analogous schemes, with split complements, with triads and with all other color groups and color schemes.

Fifth, as to poster composition: The poster must be so composed as to attract attention, first by a flash or mass of color. The shapes must be few and simple. The main idea must be presented most prominently, by means of the proper adjustments of shapes as to sizes and colors. In our illustration (Fig. 1) the idea is that the hope of America lies in the true patriotism of her citizens. This is to be accomplished thru thoro and complete education. The schoolhouse is employed as a symbol of education. Therefore the schoolhouse appears in large size, prominently placed, in strong contrast to the background, and with sufficient color to exert the necessary attractive force. The flag helps out in this respect. It is subordinate in interest to the idea typified by the schoolhouse, but it is a close second in attractive power.

Sixth, as to lettering in a poster: But one style of lettering should appear in a poster, and this should possess legibility as its leading characteristic,—a quality which is not inconsistent with beauty of proportion. Fanciful or eccentric letters are to be

avoided. The use of cut paper letters has been a wonderful help in teaching children standard forms and proportions. Letters are more easily cut than drawn, and the paper shapes have an immense advantage over the drawn forms because of the ease with which the former may be pushed about and spaced, to make words, slogans, etc. In elementary lettering the use of squared paper is quite legitimate. This device enables the children to keep widths and lengths of letters uniform. If letters are inaccurately drawn or spaced, they are an offense to the eye and the whole poster suffers in consequence. In all phases of design, posters included, mechanical aids to accuracy are habitually employed by designers. Educational methods should be in harmony with practical methods.

Seventh, as to building up a poster: The poster shown in Fig. 1 is a legitimate war activity, standing as it does for "One Flag, One Country and One Language." The process of its development may be taken as a suggestion for the building up of other posters. First, an outline sketch was made of the whole plan (Fig. 2). The drawing was carefully made to show the perspective of the house, the location of the windows and door, the position and form of the flag, the shapes of the shrubbery, etc. The sketch was made in full size, as all shapes were to be traced

from it. For the background of the poster, a light gray paper was chosen. The first shape cut was a foreground of gray-green. This was pasted on the lower part of the gray paper, leaving the upper part uncovered, to represent the sky. Then the shape of the schoolhouse was traced from the outline drawing, cut from white paper and pasted in place on the gray background (Fig. 3). The roof shape was then traced and cut from red paper, and pasted in position. Next, the flagstaff was placed and cut from gray manila paper and pasted in its place. The whole shape of the flag was then traced and cut from white paper, and pasted in right relationship to staff and roof (Fig. 4). In the same manner the red stripes of the flag, the blue field, the bright green blinds, the blue-green shapes of the nearer bushes, the black shape of the tree behind the schoolhouse, and the shapes in the little bell-tower were all traced, cut and pasted in position. The door was a tiny rectangle of gray manila paper.

The simple, easily read and well-proportioned letters were cut from white paper, carefully spaced and pasted to form the poster's legend. A proportion of four to five was used in cutting the letters. The finished composition was finally mounted on a sheet of dark gray-green paper, leaving a suitable margin.

## MAP MAKING

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Cornwall-on-Hudson



HE making of a simple map is a practical problem for the drawing class, and one that will appeal to boys at this time as being a bit of military training, for every soldier should be able to make a topographical sketch.

In map making all accidents on the surface of the ground, whether natural or artificial, are represented by means of certain fixed conventional signs, a number of which are shown in Fig. 1. More complete lists may be found in the U. S. Engineering Field Manual, or may be obtained from the Director, U. S. Geological Survey, Washington, D. C. The execution of the symbols should vary with the scale of the map.

Since the earth is spheroidal in form, there is bound to be some distortion in any map. However, "small areas, having an extent of not more than about ten miles in latitude and longitude, may be regarded and plotted as plane surfaces, and no serious error will be made unless the scale is very large."

Maps are drawn to various scales, depending of course on the amount of detail to be shown. The scale of a road sketch is commonly three inches to the mile.

Distances on the ground to be indicated on the map are paced off by the sketcher, so that it will be necessary to construct a working scale to transfer

the paces to the paper. This scale may have one edge divided for paces or strides (a stride is two paces), and the opposite edge for yards. The average length of a pace may be determined by taking a number of steps in a certain direction, and dividing the distance by the number of steps.

The equipment necessary for making a field sketch is very simple, and consists of the following material:

Sketching board, compass, scale, paper, pencil, eraser, and thumb-tacks.

### METHOD OF LOCATING OBJECTS.

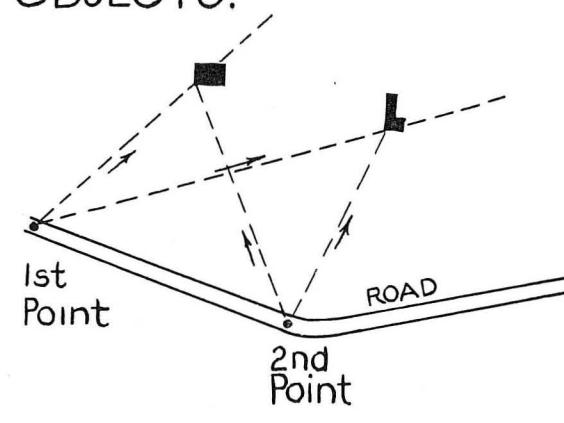


Fig. 2.

Let us suppose the student is to make a simple road sketch, which will consist of a map of the road and a narrow strip of the country on either side. The sketch should contain information on the following subjects:

Road, kind, and condition; bridges; country, character of; streams, names of, if navigable; towns, names, and location on map; railroads; important landmarks.

In beginning the sketch, select a suitable starting point, and mark its position on the map by sticking a pin there.

Next the board is carefully oriented by placing it at the starting point so that North on the map (which may be shown by drawing an arrow near one edge of the paper) will be parallel to the compass needle. For our purpose it will not be necessary to indicate the magnetic declination. As a rule the top of the map is North.

Now we are ready to begin work. Without moving the board, sight along the road by placing the scale against the starting point, and draw a line of indefinite length. If there are any landmarks on either side of the road, as trees, buildings, etc., they may now be located by intersection, as follows: Sight from the starting point to the object, and draw a line in that direction. Then pace off the distance to the first turn of the road, and mark its location on the map. That done, the board must again be oriented

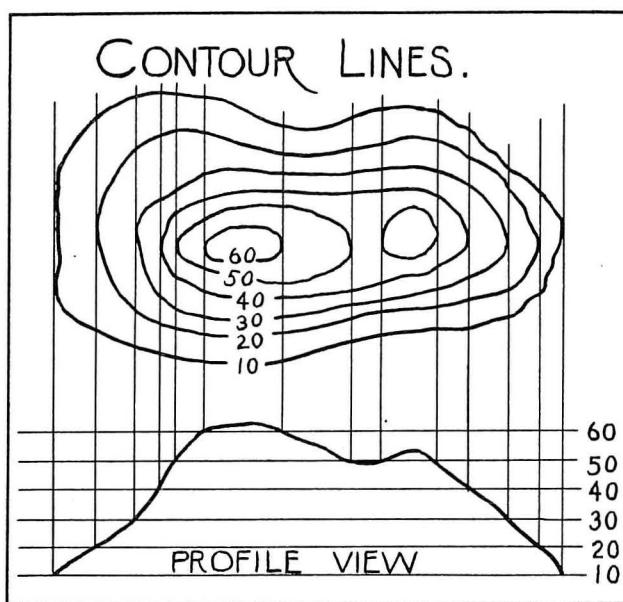


Fig. 3.

either by the compass, or by sighting back over the distance which has been paced. Now again sight toward the landmark, and draw a line which will intersect the first one. The point of intersection will be the position of the object on the map. See Fig. 2.

Next, keeping the board in the same position, sight along the road to the next turn, and draw a line, after which the distance is paced off as before, and the turning point indicated on the paper. Continue in this manner until the map is completed.

If it is so desired, the student may finish the sketch by representing the elevations and depressions by means of contour lines, which are lines connecting all points of the same elevation. See Fig. 3. The vertical interval between these lines with a scale of three inches to the mile is twenty feet; six inches to the mile, ten feet.

The approximate rendering of these lines is all that can be expected, as the accurate delineation of contours belongs to surveying; but the student will readily grasp the principles involved.

The steeper the slope to be represented, the closer together the lines should be. A vertical rise would be shown by superimposing the lines.

Contour lines should not be drawn across the road. They should be numbered, as shown in Fig. 3.

The single stroke gothic letters may be used for the title and notes, the preferable position for the title being in the lower right-hand corner of the map.

To complete the problem, a tracing and blueprint should be made from the finished field sketch.

More detailed information about the subject of map making may be found in any of the following books:

Manual of Military Map Making, Hutchinson & MacElroy.

Topographical Drawing, Stewart.

Engineer Field Manual, 5th (Revised) Edition, (War Dept. Document No. 355).

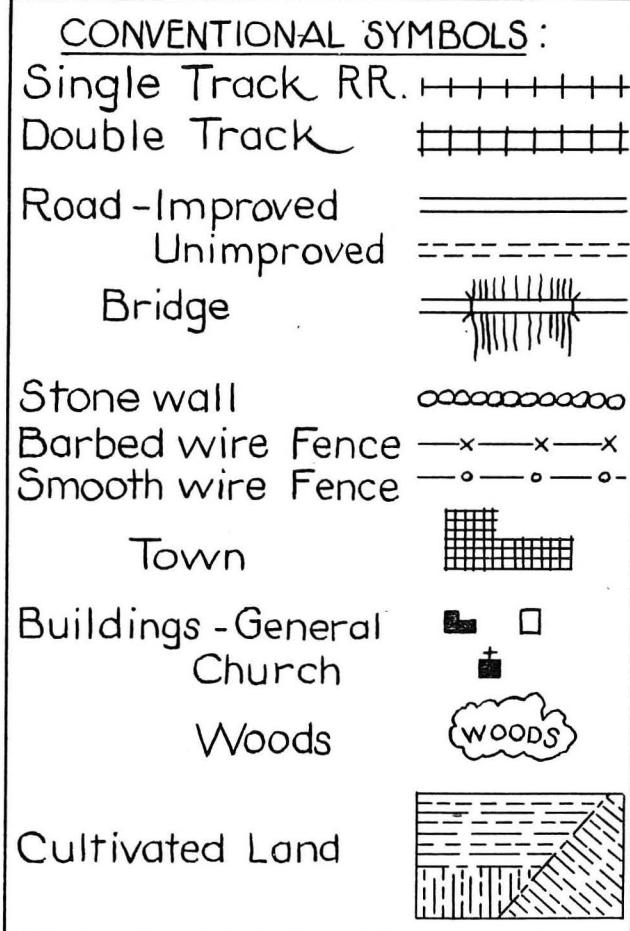


Fig. 1.

# THE LIFT PUMP AS A SHOP PROBLEM

Francis E. Mack and William B. Courtney, Trenton, N. J.



HE problem of interesting the boy who has no interest nor desire to do the "regular" shop problem is a serious one and deserves consideration by all progressive instructors.

Very often the boy's lack of interest is due to his dislike for the medium in which he is working. Possibly he has reached that stage in his development where his interest lies wholly in mechanics or "things that work." Naturally the old "wooden" type of manual training problem does not appeal to him.

The easiest way to dispose of this type of boy is to ignore him as long as he does not disturb the rest of the class, but the wise instructor, on the other hand, will endeavor to find his interest by carefully studying the boy and his problem. If we choose the latter method the keenest kind of interest will be aroused; opportunity will be given for splendid research and investigation; better results will be obtained and more important than results will be the fact that you "have the boy," which after all is the goal we are endeavoring to reach.

Thru the introduction of a problem in elementary science, greater stimulus is given the student to think for himself, thus making him more independent. His work becomes vital and a part of his everyday life. More efficient correlation will result with his other subjects such as English, mathematics, spelling, elementary science, etc.

The manipulation of materials other than wood will give him a wider scope for his inventive ability. His home reading to a certain extent will be under the supervision of his instructor. The shop teacher will have less disciplining to do; the boys will have a keen desire to work and the class a happy atmosphere which is always conducive to good work.

Trade catalogs may be discussed. Visits to neighboring factories can be arranged and discussions relating to the mechanics involved can be given in a very simple way, thus bringing the boy in closer contact with his community life.

The lift pump is an excellent problem in elementary science, and if presented in the proper manner will prove very inexpensive, as the boys can furnish nearly all the materials required. The following ma-

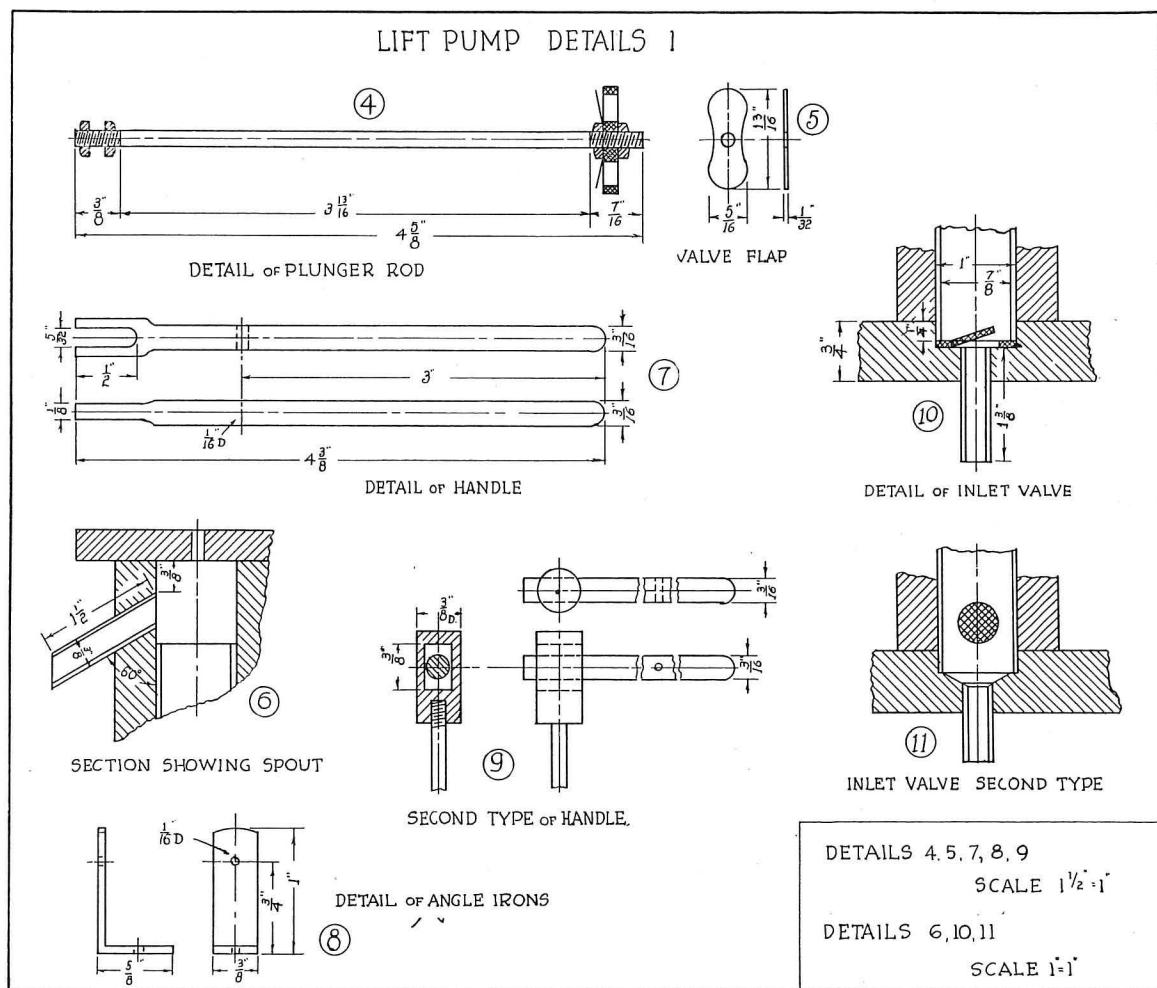


PLATE 2. DETAILS OF LIFT PUMP.

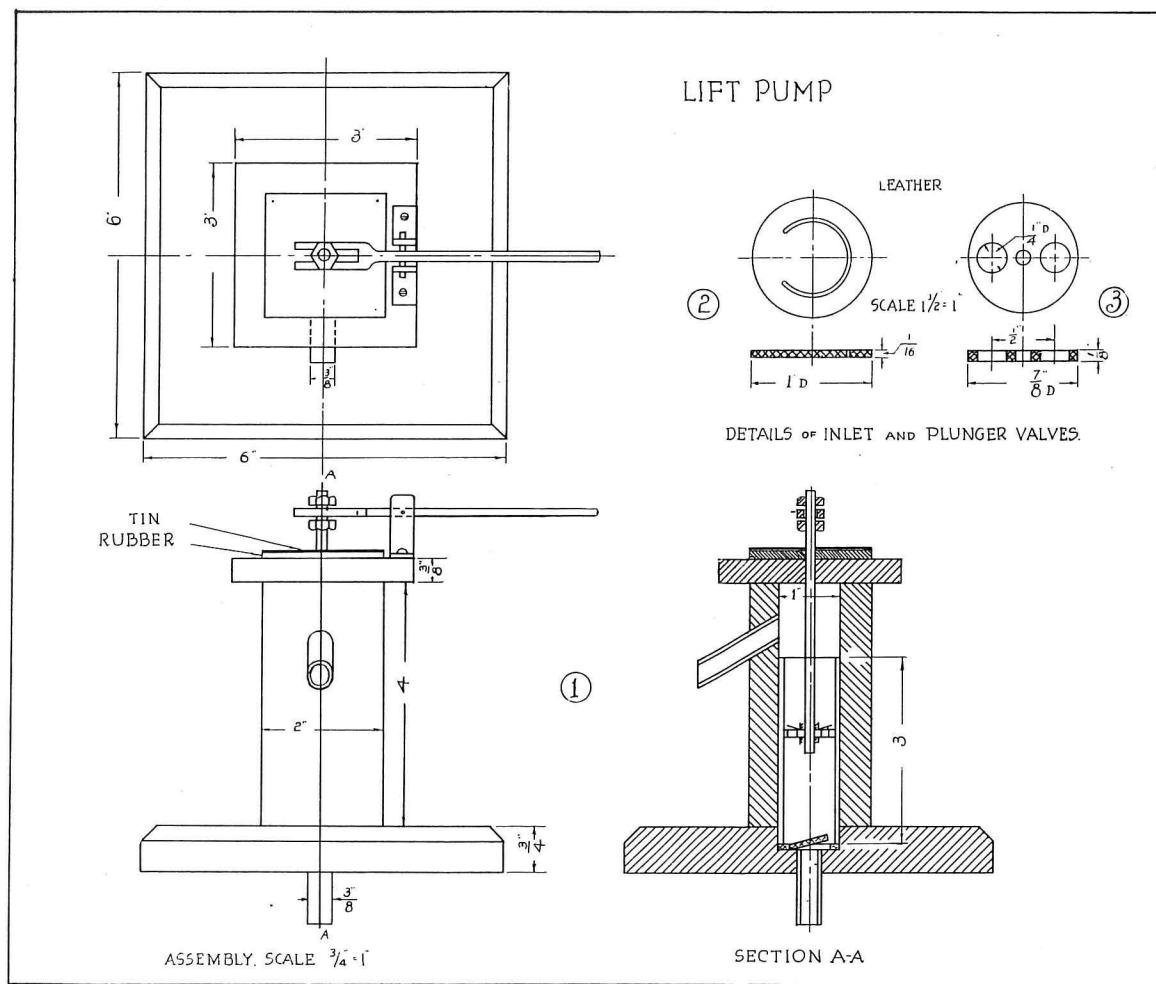


PLATE 1. LIFT PUMP.

terials will be needed: old shoes and rubbers for valves and plungers; old bicycle pumps for cylinders; short pieces of iron rod for handles and piston rods; marbles for ball bearing valves and small pieces of scrap lumber for the base and top.

The equipment necessary to make the pumps shown in the accompanying drawings outside of the regular bench equipment is a metal working vise, a hack-saw, a soldering iron, metal snips and files. The soldering iron and necessary taps and dies may be purchased at the five and ten-cent store.

The pumps with details of construction shown were suggested and executed by boys in the sixth and seventh grades.

No explanation is needed in regard to Plates 1 and 2, as the drawings show quite clearly the method of construction.

On Plate 3, details Nos. 12, 13, and 14 are somewhat difficult and may need a short description.

The valve shown in detail No. 12 requires some very accurate work with the soldering iron and, therefore, should be suggested only to the boy who displays some dexterity with that tool.

Two 1" iron washers with a leather washer between are soldered to a piece of  $\frac{1}{2}$ " pipe  $1\frac{1}{8}$ " long. One end of the pipe is covered with a small piece of tin or copper and sweat soldered to the pipe, after which a

5-16" marble or ball bearing is placed inside the pipe and the other end closed in the same manner; then drill  $\frac{1}{4}$ " holes in each end of the pipe. Bend two pieces of tin to the shape shown and solder one end of each to the piston rod and the other end to the iron washer and sides of the pipe. This valve is quite complicated, but if care is taken in its construction a neat looking valve will be the result.

The valve shown in detail No. 13 can be made from any wooden cylinder. Care must be taken to have the wooden cylinder smaller than the metal cylinder, otherwise the wood would swell and become useless after a short time.

I. Bore  $\frac{5}{8}$ " hole thru cylinder at right angles to the long diameter. Chisel this hole square.

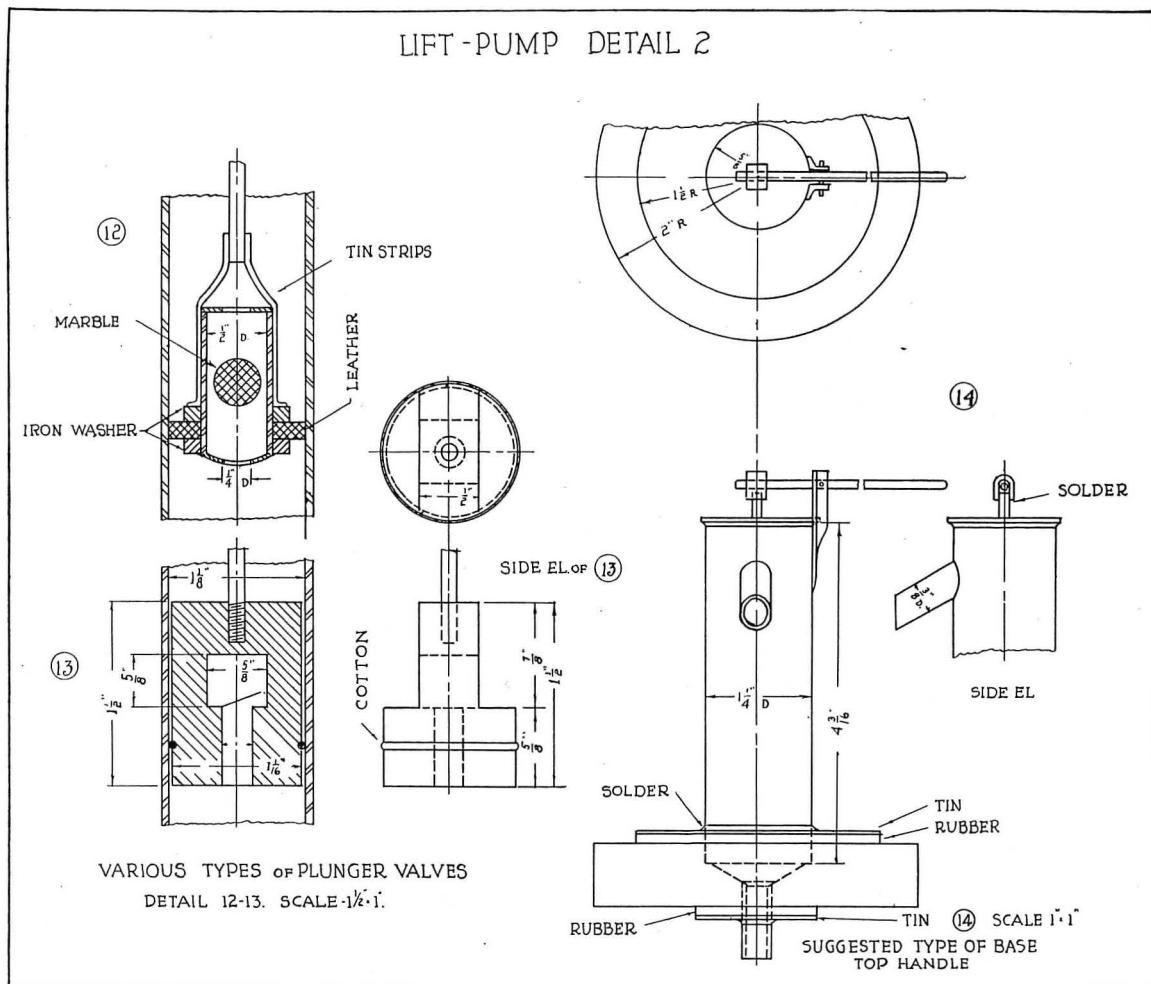
II. Bore  $\frac{1}{4}$ " hole up from bottom thru to the  $\frac{5}{8}$ " opening.

III. Make small leather valve to fit over this opening and fasten with small tack on the bottom of the  $\frac{5}{8}$ " opening.

IV. Drill hole thru from top to  $\frac{5}{8}$ " opening and tap with No. 8-32 tap to fit the piston rod.

V. Taper sides of cylinder enough to allow water entering valve to escape from  $\frac{5}{8}$ " opening.

VI. File with cat-tail file, groove around the sides of the cylinder and place enough cotton packing in groove to make a tight fit with the metal cylinder.



VII. Soak valve in oil to minimize swelling.

Detail No. 14 shows an all metal pump with the exception of the base. This type of pump is more difficult to make than those on Plate 1; but it makes a very pleasing appearance when completed.

I. Bore half way thru base to receive cylinder.

II. Bore thru base to receive intake pipe.

III. Countersink the larger opening to receive ball bearing or marble large enough to cover the opening in the intake pipe.

IV. Cut 3" rubber washer to fit the cylinder.

V. Cut 3" disk of tin to fit the rubber washer.

VI. Solder tin disk to cylinder.

VII. Place thick paint or white lead between washer and base and fasten securely with brads or screws to base.

VIII. Cut 1 1/2" washer and tin disk for intake pipe; solder and fasten in same manner as the cylinder.

IX. Make plunger as shown in detail No. 13.

X. Drill hole in tin disk 1 1/4" diameter to fit the piston rod.

XI. Place marble for intake valve in cylinder; then place plunger and piston rod in place and sweat solder the top in place.

XII. Drill hole for spout or outlet pipe and solder pipe in place.

XIII. Make handle from 1/8" or 1/4" iron rod.

XIV. Make bearing and bracket as shown from heavy sheet copper or brass.

XV. Solder bearings and bracket for handle in place.

XVI. Oil bearings; prime pump if necessary and then "she works."

To secure good results with the boys in soldering insist on clean work, a hot, clean iron, very little flux and a small amount of solder. If the instructor approaches this problem in the right spirit, the success of his project is assured; as all of the pumps were developed by boys with a wholesome enthusiasm to work and a keen desire to do it well.

**I**N the industrial world no man or master is of much value to himself who is ignorant of the literature of his trade, of his art, and of the science of it.

# A COLLEGE COURSE IN TYPOGRAPHY

Arnold Levitas, Instructor, College of the City of New York



*HIGHER Typographical Instruction.*—With the development of the printing industry and its advent in the field of industrial education there has sprung up a demand for such typographical instruction as may be applied to the various activities in and allied to the trade.

*Artistic Tendency.*—The modern methods in printing have developed an artistic tendency commensurate with the general evolution of art. Added to this there has developed a demand for a kind of typography that is plain and readable and which tends toward bringing out the literature most effectively and concisely.

*New Field.*—Men and women have entered the new field of fine typography, and many are the aspirants and students in the fast-growing vocation. Until now these students of good typography have sprung up in a haphazard manner, and the shortcomings and handicaps, as a result, have been noticeable.

*Need for Systematic Instruction.*—That a need exists for systematic instruction in the trade goes without saying, and it is the university or college which is to provide the practical means to carry out such training successfully.

Such courses would open up opportunities as yet unknown and undreamt of, and many men and women in various activities related to the printing trade would seek instruction in such classes.

*Classes of Students.*—The various classes of teachers of printing, working printers, advertising men and women, editorial workers, office workers in publishing houses, aspiring typographic experts, and also those who desire to apply their knowledge of art to practical purposes in the printing and allied trades would be the logical students of such courses.

*Executive Positions, Teaching, Supervising, etc.*—Men who desire to qualify for executive positions, such as foremanship, superintendence, managerial work, etc., and also men who teach and those who aspire to teach, supervise, and direct in any of the branches of the trade should find an opportunity to prepare and train in classes established for the teaching of printing and typography.

*The Teachers of Printing.*—There is a class of men in the printing field now strongly coming to the forefront—the teachers of printing in prevocational, vocational, and junior high schools. These men, who are to create the future generations of printers, need preparation to help them to properly lay the foundations of printing knowledge in the minds of their students.

Many of these teachers have no definite courses, neither are they acquainted with any particular

methods of teaching the subjects. Those who teach and those who aspire to become teachers have no particular basis or foundation on which to prepare themselves for that work.

*Courses of Study.*—The courses, consisting of the technical and theoretical phases of the trade, would be fitted for all classes of students, and these subjects would comprise most of the work to be taken up.

Courses particularly fitted for teachers and aspiring teachers may consist of methods of teaching generally and such as might be particularly applied to the printing trade.

The courses, then, will be divided into three parts—technical, theoretical, and pedagogical. Those in the teaching profession will require all three parts; while other students will only be interested in the first two courses.

*Methods of Teaching.*—The methods and courses of study should be taken with a view to help these students in a most practical way. Since every job that is printed has its definite reasons for existence and its proper place in the commercial world, it is, first of all, necessary to make these phases plain to the students. Once this is known, it will become a much simpler thing to teach them the planning and layout of a job, the relationship of words and lines to each other, and the value and appreciation of harmony, balance, and spacing. The actual practical work in courses of this kind is perhaps the least difficult problem.

*Enumeration of the Courses of Study.*—The courses of study should consist of the following:

## *Part I—Theoretical Courses.*

1. Theoretical Typography.
2. Proofreading and Copy-Editing.
3. Cost-Finding and Estimating.
4. Administration.

## *Part II—Practical Courses.*

1. Composition.
2. Stone-Work.
3. Press-Work.

## *Part III—Pedagogical Courses.*

1. Methods of General Teaching.
2. The Teaching of Printing.

*Duration of Courses.*—The completion of all the courses would require three years. It would be left to the interested students to select any one or all three courses, according to requirements and circumstances.

*Credits.*—The college should give due credits to students who have successfully completed any of the courses. Counts may be given and diplomas issued, which should be useful toward further study and as a recognition in the trade.

*Time of Study.*—The most convenient time for the pursuance of these courses would be during evening

hours, and also during Saturday mornings and afternoons.

Some of these courses may also be arranged for summer study to teachers and others who are interested and could devote the time.

*Organization of the Work.*—It would be advisable to select representatives among the members of the various activities connected with the printing product

to serve on a committee which will promote the formation of classes for the study of these courses. This body of men, representing the printing industry, the printers' union, the printing teachers association, the typefounders, etc., should be called "The Advisory Committee," and should act in conjunction with the authorities of the college in establishing and conducting these courses.

## A NEW BASKET MATERIAL—*JUNCUS EFFUSUS*

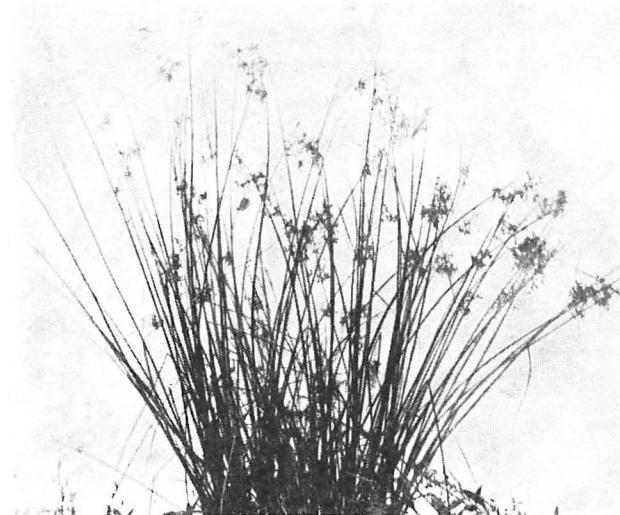
Anna la Tourette Blauvelt

With the shortage in the supply of round reed and its consequent rise in price other materials for basket weaving are receiving unusual attention. I bring to your consideration a native rush abundant in our damp lands; the rush known to botanists as *juncus effusus*.

*Juncus effusus* is the mat rush of Japan; it is known also with us as the candle rush because in the early days of our own country the pith was used for making candle wicks.<sup>1</sup>

It is found in damp meadows and waste places, often in company with the sedges or with ferns and wild flowers which thrive in dampness. The circular stalks spring directly from the root amid the battered growth of the previous year. The color is at first a grass-like green. As the season advances there appears at a point a few inches from the top of the stalk, a green tuft which becomes the fruit. As the fruit matures the stalk deepens in color. During August the fruit turns brown and the stalks after this tend to yellower greens eventually turning brown. After much weathering they become a pleasing gray, reminding one of the color of lumber long seasoned by the elements.

<sup>1</sup> See Dodge, *Useful Fibers of the World*.

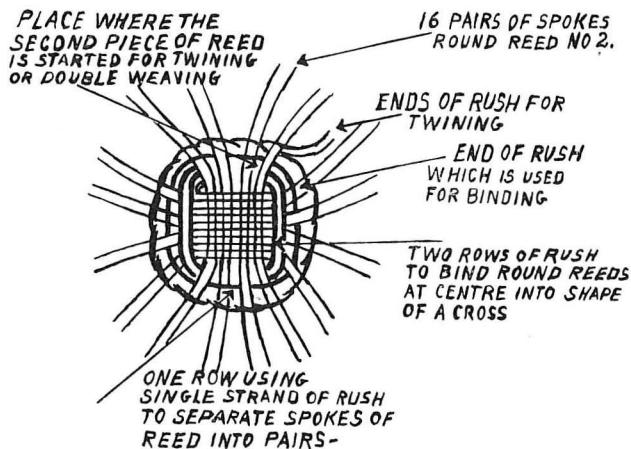


*JUNCUS EFFUSUS.*

(Found in bog land near North Adams, Mass.)

A rush common to all parts of the Temperate Zone; abundant in New England and Middle States. Found in damp meadows from June to September—2' to 3'—stalks for weaving mats or baskets may be gathered (in some localities) as late as October first.

### CENTRE OF BASKET MADE OF RUSH (*JUNCUS*) USING ROUND REED FOR FOUNDATION



Details of Basket made of Rush.

*Juncus effusus* is an interesting plant, abundant in the New England and Middle States. It is readily identified by the fluffy fruiting tufts swaying atop the clustered stalks.

A sickle applied to the base of a clump of *juncus* will garner many stalks with despatch and without injury to the crop for the succeeding year. The stalks should be sorted according to length and the fruiting tips cut off. Do this on the spot where they are garnered. A clean bundle will result which, brought to the house, will make no litter. The *juncus* should then be spread where it will dry quickly; that is to say, within one or two days. Slow curing invites mildew. The easiest way is to place the rushes on a wire screen and turn them over every few hours; but newspapers can be used instead of wire netting. Dried, the colors change to gray green and olive browns, permanent and very attractive. Once dry *juncus effusus* will keep indefinitely.

The *juncus* most easily worked by beginners is that gathered and cured while the stalks are green. At all stages, however, it is usable. All brittleness resulting from pithiness or age can be overcome by application in borders upon baskets made either of flat ash splints, or flat or round reed, or of willow. The easiest foundation to use in school is the round reed No. 2.

The primitive Indian method of twining or double

weaving so common in sweet grass work, is the best weave for *juncus*.<sup>2</sup>

To restore the dry rush to a state of pliability sufficient for weaving, the stalks should be sprinkled and rolled in newspapers so that the moisture may penetrate evenly thru the mass. Do this about an hour before they are to be used. Another way is to wrap the rush in a wet towel over night, but this is usually less convenient than the former method.

A basket covering for a finger bowl may be made, using three lengths of round reed No. 2 and a handful of *juncus effusus*. Dampen the *juncus*.<sup>3</sup> Cut 16 spokes of round reed No. 2, 19 inches long, cross 8 spokes across 8 at the center as for any round basket and bind twice around with a single pliable rush used as a round reed would be used to begin a basket center. We are once around with the single rush to separate the spokes with 16 pairs. Now add a second stalk of rush and proceed with double weaving or twining, covering each succeeding pair of spokes on

<sup>2</sup> Weave from the small end of the stalk, trimming off the thick butt as necessary. Use a long, slanting cut.

<sup>3</sup> Caution: Do not let it get soaking wet, on account of the shrinkage in the finished weaving.

both sides and thus concealing the foundation reed as the bottom and sides are woven up.

When the base reaches a diameter of two inches the distance between the spokes will appreciably widen. To obviate the necessity of doubling the spokes at this point, add one strand to each of the weavers, keeping two weavers twining as before, but each is now made up of two stalks of *juncus*. Begin now to shape upward, being guided by the size of bowl to be covered; weave to full height of the bowl. Now tie down the weaving and let the basket dry.

The following border makes a good finish: Cut off one reed in each pair just at the top of the weaving. Weave each spoke now standing behind the next at the right and out. This completes the first row around. Second row—weave each spoke over the next at the right and down. Third row—weave each spoke over the next at the right, pushing it thru the basket into the inside. Trim off the ends now projecting within the basket so that each reed is secure against a spoke upright in the woven part. Slip in the finger bowl and push the border down firmly. The basket is now complete.

## HISTORICAL STYLE AND THE DESIGNER

(Second Article)

Edward J. Lake, Professor of Art, University of Illinois



THE Arts of Chaldea and Assyria depend on naturalistic representation. Figures of animals in grotesque and severe form that are not suitable to the decoration of modern industrial projects are most evident in the early arts of Mesopotamia. The Assyrians originated few decorative motives excepting those of animal forms but they used motives borrowed from other races in a distinctive way.

The reproduction of Assyrian forms in their exact historical character should be avoided by the modern designer but the style has an assertive form and line which may be expressed in modern design.

In the design of a stool which is shown this is attempted. Assyrian structures have a square form enriched with accents at the conjunction of members. Chamfered and rounded corners modify the heavy proportions.

A little bold enrichment by bands and rosettes are painted and carved. The colors most used are olive green, light blue, light yellow, black and dark red. This stool design is executed in deep mahogany red with touches of yellow and black in the bands and rosettes. The upholstered seat is stenciled with a lotus design radiating from the center. The lotus petals are light blue, and the buds and center are tan and the ground color is red-brown.

The bench design illustrated is an application of

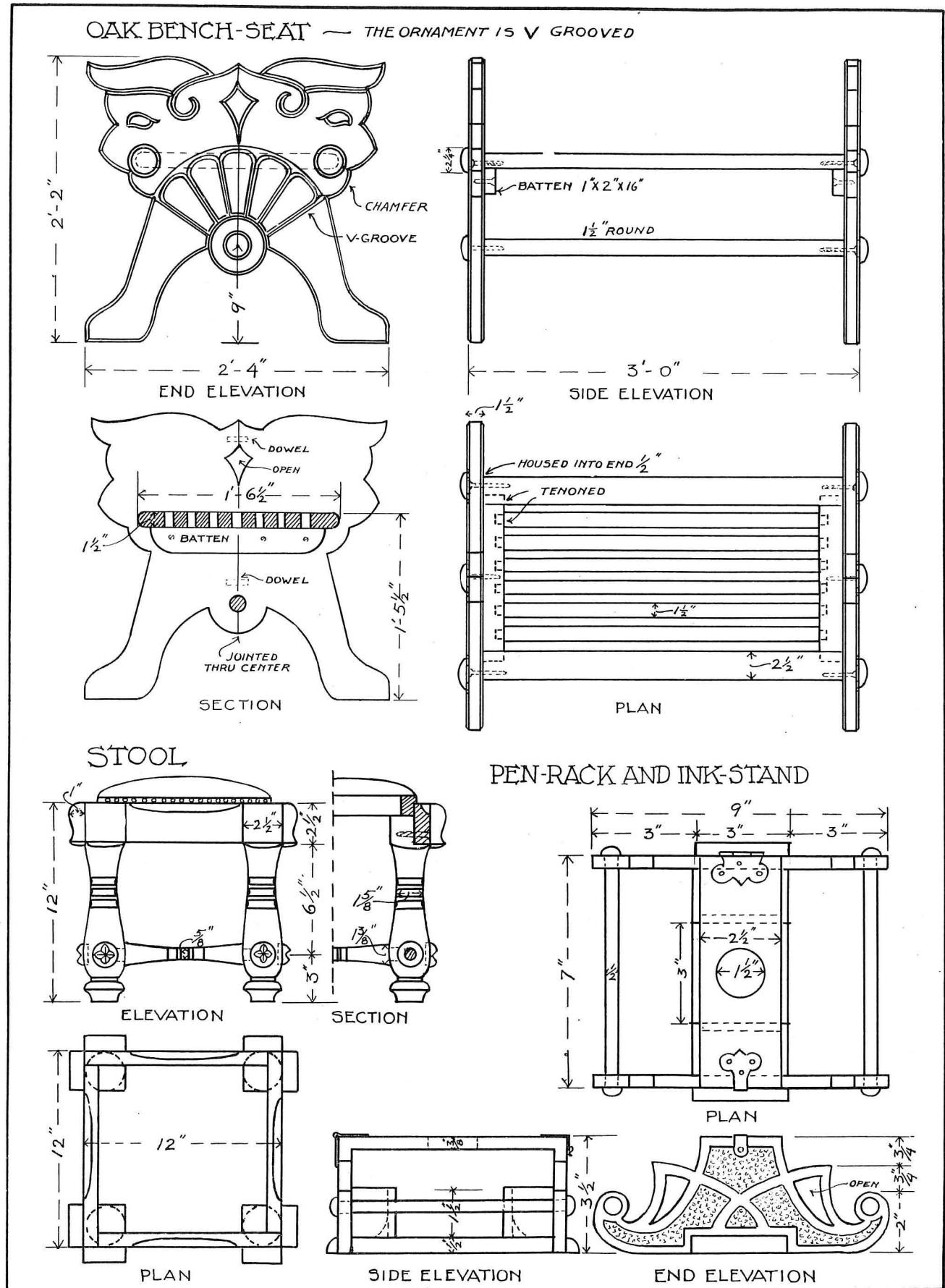
the grotesque double-headed capitals of Persepolis but it is modified to a profile, conventionalized and adapted to the construction of the bench.

Grotesques are interesting and expressive. They are too interesting and significant for general use in design. Grotesques had distinct meaning as used in ancient art and become mere curiosities when applied in their original form to modern designs. A bird, animal or plant reproduced to look natural or life-like is so dominantly interesting that it detracts from the design of which it is but a part. Such forms must therefore be used with great caution and only when the natural interests are modified and related to the line, form and construction of the object.

The couch design shown may not be recognized as Assyrian. In fact it is not Assyrian in more than the abrupt form of the top of the leg and in the use of the imbricated or scale ornament on the side and end boards. This imbricated ornament is peculiarly Assyrian, tho found in Egyptian art and probably borrowed with other ornamental forms from the Egyptians.

The book-rack, book-end and ink-stand are each in form and line suggestive of Assyrian design tho not reproductions of Assyrian objects.

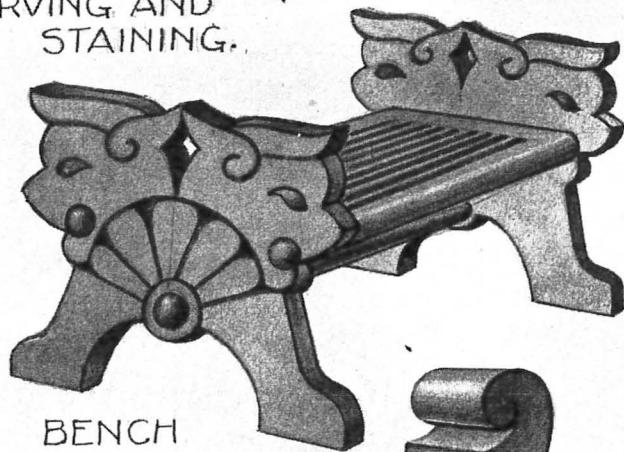
Assyrian art was a bold, expressive art that is well worth study by the modern designer for these qualities.



PROJECTS IN WOOD SUGGESTIVE OF THE ASSYRIAN STYLE  
ENRICHED BY SIMPLE CARVING AND  
STAINING.

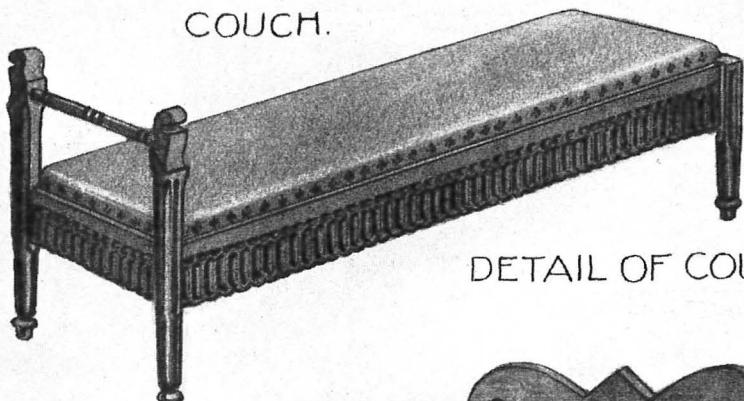


STOOL

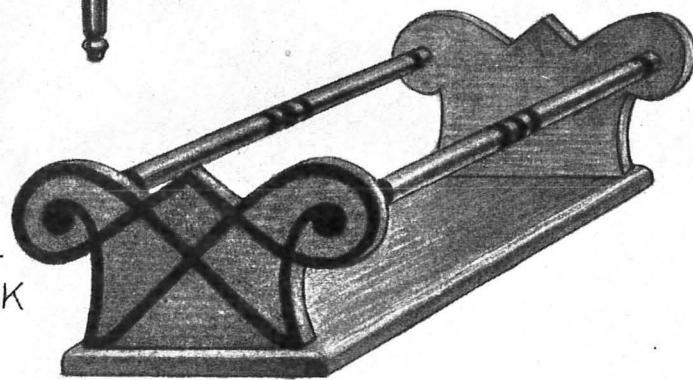
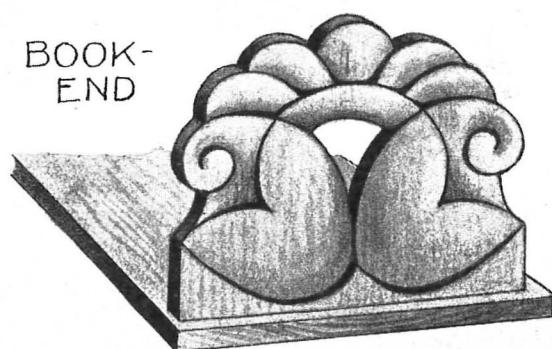
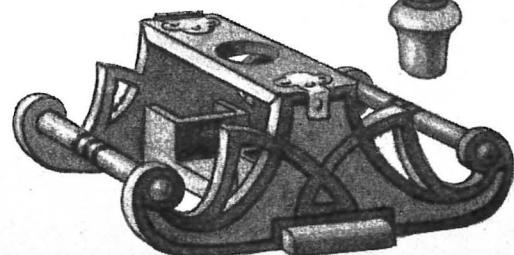


BENCH

COUCH.



DETAIL OF COUCH

BOOK-  
RACKBOOK-  
ENDPEN-RACK AND  
INK-STAND.

# A FEW SATISFACTORY MEDIA FOR HAND WORK

Garrah M. Packer, Supervisor of Manual Training, Cedar, Iowa



HE high price of reed and raffia led the writer to the search of and experiment with other mediums to take their places.

I had noticed the softness and pliability of some dried iris leaves which I had taken from the iris bed in the yard. Immediately I saw their possibility and determined to give them a trial, so I gathered a great number of the green leaves of both the tame and wild iris, spreading them to dry in a shaded, dry place, watching that they did not mold. When dry they were of a buff color. This medium, when soaked, I used in weaving mats, picture frames, pin cushions, porch pillows, rugs, and other articles.

While gathering the wild iris my attention was drawn to the long cat-tail leaves near by, so I obtained and dried a quantity of these leaves in the same manner as the iris. To my gratification I found them to be very satisfactory and of course went much farther than the iris because of their size. The work was somewhat coarser when finished, but for mats, porch cushions, rugs and the like the leaves were even better.

Especially in the primary and elementary grades do we find the great use of beads for stringing, which,

like other media of the time, are harder to obtain as well as higher in price.

The weed we call horse-tail which grows along the roadside and in the fields, a great nuisance in some localities, is a many-jointed plant and may be pulled into as many parts as there are joints. Every country child has had this pleasure.

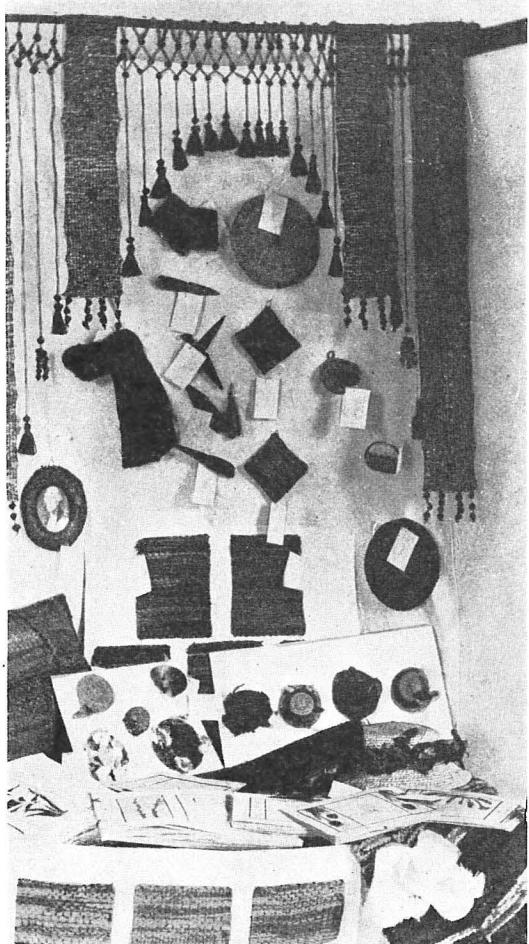
Gathering many of these while yet green I pulled them apart and put them to dry. There are many lengths in nature and if they are to be still shorter for use they may be cut as desired while green or may be dried, then soaked and cut as they are used. The green color is retained in the drying, altho just a little different shade.

Another medium for a bead substitute and an exceptionally satisfactory one is that of rose hips, both tame and wild. These may be gathered all thru the summer but I found those that were gathered after they had dried upon the bushes kept their color better and were easier to work with after soaking. They should not, however, be left so late in the fall that they would be frost-bitten as the frost has a tendency toward making them very hard.

Still another bead medium may be found in wheat straws. This makes a fine combination with the horse-tail and rose hips, giving a chance for design because of the different colors. These straws should be gathered just after they have turned from green to yellow as they have a desirable tough quality at this time. Like the horse-tail they may be cut into lengths before drying or soaked and then cut just before they are used.

Perhaps the medium I found most nearly like raffia was that of dried corn husks. These should be gathered just after the corn commences to dent and just before it gets hard. The outside husks are too coarse and hard but those underneath are velvety and soft both before and after drying. These should not be frosted, altho sometimes you may be successful in obtaining some at corn picking time that are not too brittle. Especially are the husks of sweet corn of a good quality and very pliable. One of the desirable qualities of this medium is, that it may be colored any desired color the same as the raffia. To do this, dry the husks thoroly, string them, then dye them the same as you would cloth. Because of the splendid way in which the husks take the dye and because they are so pliable they are an exceptionally fine substitute for raffia and can be used in all the ways in which the raffia is used and do not have to be soaked as long before using.

In the accompanying picture you may see a few of the things made from the mediums I have mentioned. The portieres are made from horse-tail in combination with green carpet warp, rose hips, and



Articles Made by the Author.

wheat straws. In the making of the portieres I found a splendid problem for design, as the wide strips were to have a motif thru the center.

The pupil took squared paper and worked out the design in the colors to be used before commencing to work upon the article. This, when finished, served as a working drawing from which to work. The warp for the wide strips was strung on a frame made for the purpose and was then worked with a darning needle much the same as the bead belts are made. When finished the portieres were very effective. Just below

these is a table mat of red and natural colored corn husk. On the same wall are two baskets of the same, two pin cushions, a picture frame of iris and several small mats of cat-tail. On the table are a porch cushion of cat-tail, doll hats and two children's hats of corn husks, the latter trimmed in real dried rose leaves and buds.

These are just a few articles from inexpensive media successfully tried. By further investigation, experience and thought, newer and better ideas may be developed for their use.

## WORTH WHILE MANUAL TRAINING WORK FOR SMALL HIGH SCHOOLS OR CONSOLIDATED SCHOOLS

C. C. Bingaman

 HERE is a tendency in the small town high schools and consolidated schools to pattern too much after the ways of the larger cities in the matter of teaching manual training. This, it seems to me, is unfortunate. It is all very well as the work is carried on from the city standpoint, but for the small towns, maintaining schools under vastly different conditions to try to give the same course in woodwork, is foolishness. It would be fine, indeed, if every farmer boy could make good furniture and like articles, but will a knowledge of making these things be of much immediate importance to him when he begins farming for himself? What will he need to know how to make? What will a knowledge of making many farm utensils, and other articles needed on the farm, be worth to him, in dollars?

We believe that the school should reach out in this manual training work and extend its activities beyond the school. Why not teach the boy how to make many of the articles he would otherwise be compelled to buy? Let him make a work bench in the school shop, get his fundamental knowledge of tools there, get a knowledge of reading blueprints, give him some mechanical drawing and design, but direct his activities toward the farm when it comes to making things in the shop. Have him fit up a shop of his own at home, making his own work bench, tool chest and other articles; buying a fair set of tools

and adding to them as he feels able. This should make the school manual training of some direct benefit to the farm boy who comes to town for his education and settles afterward on the farm. His school manual training work may cover construction of such articles as farm gates, yard gates, chicken brooders, wagon jacks, auto creepers, seed corn testers, work benches, screen door frames, fly traps, tool chests, step ladders, porch swings, wagon beds, hay racks, cellar doors, repairing of all kinds. These articles for repair may be brought to the school shop. A course of this kind would give the student sufficient working knowledge of things in general that he would be able to design new things and incidentally save himself many dollars every year.

In our work here last year, eight farm boys made work benches and now have work shops of their own at home, reasonably well equipped for anything they may care to make. Several of these boys have made articles of furniture in addition to the other useful articles relating to the farm. Most of the above named articles were made in the school shop and have been taken to the farm for use. This kind of work secures the hearty co-operation of the farming population of the district and patrons of the high school living outside of the district. It is possible to do extension work along various other lines of school work, especially agriculture and home economics, in addition to the work mentioned in this article.

**I**N the education of our children, how shall we harmonize their conceptions of the useful and beautiful? I question whether Art teachers appreciate the psychological elements involved. I fear they are prone to disparage *utility*, to give it, contemptuously, a second place. It seems to me that much of our so-called Art instruction in the past went stale because *utility* was despised. Art can easily be prostituted to ignoble ends, and it always will be, so long as the fundamental *social utilities* which it serves are not kept well to the foreground by its devotees.—*David Snedden*.

# INDUSTRIAL-ARTS MAGAZINE

## Board of Editors

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## EDITORIAL

### LESSONS FROM ARMY SCHOOLS.

THE boys from the aviation and other schools of the service, in both army and navy, are writing back glowing descriptions of their work. They manifest the greatest pride in the surprising number of advanced courses required and in the long and strenuous schedule of hours.

These experiences and tests of real capacity will undoubtedly modify, in a very material way, our school procedure in the coming years. We have almost universally underestimated the initiative and the capacity for work and accomplishment possessed by the average young man. There has been too great a tendency to assume that work and subject matter must all be predigested, done up in dainty 45-minute packages, and administered painlessly with the soothing accompaniment of perfectly pedagogical chants. But when there are stressful times with great tasks to be done and burdens to be borne, when life is at stake for the preservation of great ideals, education ceases to be dilettante and becomes rugged and virile. High school boys under the impetus of war become *men* ready and anxious and able to do men's work.

If only the demands of peace times after the war could be made to seem as immediate, pressing, and important as those of war in war times, what a revolution the schools would experience!

It is the schoolmaster's job not only to turn the forces of the school to the solution of war problems, but to see thru and beyond the war and its problems and to preserve for the reconstruction period the lessons, the energy generated by the war crisis, and the varied forces which the necessities of the struggle have liberated. This would mean new life and enthusiasm; the reconstruction and restatement of aims and principles; and the voluntary enlistment of every individual of society in the colossal task of preparing all for the peace and responsibilities of the democracy for which we are now fighting.

### THE NEW PSYCHOLOGY.

THE field of vocational education as well as other fields of education are certain to profit by the work of the psychologists in military hospitals and in army camps. The psychology of the school has been so highly theoretical and so disconnected from the actual affairs and conduct of life that it had with considerable justice been held up to ridicule. The "professor of

psychology" has often in times past been regarded as the very embodiment of the absent-minded, speculative visionary.

There is a decided change becoming apparent. It started before the outbreak of the war, but the work of the psychologists in the military hospitals in connection with the re-education work has demonstrated how complete the change has been and how vital and far-reaching the field of psychology really is. This is undoubtedly due somewhat to the change in the type of men engaged in such studies, but it is more largely due to the changes in the point of view and in methods of procedure of the psychologists themselves.

Almost every situation in any army post, as well as in civil life for that matter, is a case for the psychologist. Is the man discontented, grouchy, and troublesome? Call the psychologist. Does he do his task poorly or well? The psychologist finds the reason. Is he trying to do things for which he is totally unfitted and which he can never do well? The psychologist discovers it and sets him straight. Does the man chafe under restraint and rebel against authority? Does a student sometimes? In either case the psychologist finds out why. Does he permit himself to become subject to immoral influences and suggestions? The psychologist finds the reason and provides a remedy.

People are coming to see that in all human intercourse the largest factors are *mental*, and that these factors control and fashion life and conduct and society. It is becoming more and more clear that in the field of industrial education psychology of this modern, practical type must play a much larger part than it has thus far played. For, after all, the preparation of one for any occupation that meets a large need in society must necessarily be based upon and given in the full light of modern psychology. This will give guidance of a much more significant and far-reaching nature than the late lamented "vocational guidance" movement proposed.

### FEMININE INFLUENCES

IN a recent newspaper article Rudyard Kipling comments on the American youth as he sees him in the United States Army on his way thru England to the battle grounds of France.

In Kipling's imagination the American youth has effeminate characteristics due, as he surmises, to long school training under women teachers. Soft speech and a certain gentleness of bearing are attributed to our boys by the English bard; but he asserts that when the atrocities of the Hun are experienced by our gentle, soft spoken lads they will react thru that effeminated nature and become the most determined fighters of the war.

We have no doubt of the ultimate fighting ability of our soldiers. That is assured by the example of those who have reached the battle front. As to the

soft spoken gentleness of our American youth due to long instruction under women teachers, we have our doubts of Kipling's diagnosis. We, who have had a longer and more intimate experience with American youth than Kipling could have as they passed thru England, have not noticed a reserved speech or restricted action on their part but, rather to the contrary, we have noticed an assertive and often boisterous and mischievous tendency. We have accounted for this tendency as a natural exuberance of healthy and confident youth. School officials in America will recall a time not long ago when this exuberance found expression in pranks that threatened to bring the colleges and secondary schools into disrepute. The cure for this mischievous license on the part of our school boys has been found in plenty of healthy, manly work and play. The manual arts have had their part with athletics in effecting the cure.

If one quality stands out more clearly than another in the comparison of our soldiers with those of European nations it is a saving sense of humor. This sense of optimistic humor is not only tolerated but encouraged in our American schools. The universal school joke paper is an American expression of humor that is not repressed by rigid discipline.

If reports from observers of our soldiers in Europe are true they yield to discipline in a good natured way and face danger with a grin. These qualities are the result of a discipline that does not degrade.

Contrary to Kipling's surmise that our boys are effeminated by women teachers we believe that women teachers and co-education has done much to instil in the American youth these sterling qualities of the true crusader.

What boy of our American schools has not in his heart a sentiment and in his mind a precious remembrance of a faithful, forbearing teacher around whose prim feminine head there shines a halo? In that time of ultimate justice and liberty for which we are fighting it may be appropriate for our returned American school boys to erect a monument to the American Woman Teacher and enlist in the cause of increasing her salary.

#### CAN WE LEARN TO DESIGN?

AT this time when the American designer must be depended on to develop the artistic standards for our industries it is a hopeful indication to note that the considerable material in our American museums is used by our few designers and teachers of design with a degree of success.

Mr. M. D. C. Crawford, design editor of Women's Wear, presents a statement of a most interesting art movement in "creative research" thru the columns of the American Museum Journal.

This movement, according to Mr. Crawford, centers in the American Museum of Natural History in New York, where leading designers of New York City are now seeking and securing inspiration for their

designs. Mr. Crawford says of this movement: "It may not be out of place to note that this work has continued steadily, that the results have been not only artistically but commercially successful. Many of the most interesting designs in printed silks and cottons now on the market owe their origin to some specimen in the American Museum. Not a day passes but I see some textile design either worn in a garment or on display in a shop window that owes its origin to museum inspiration."

Miss Ruth Wilmot, instructor in costume design in Teachers College of Columbia University, has recently produced with her advanced class many modern garments that have commanded attention.

These designs are reported as the result of careful study by the design class of specimens in the American Museum.

We surmise that they are the result of Miss Wilmot's teaching and that this result has been attained by a careful study of the industries involved as well as of the artistic effect in museum specimens. Art without industry must be as futile as industry without art in the development of the designer.

The museum offers examples of applied art that are tangible to the designer. American museums cannot be favorably compared to the museums of Europe in the quantity of historical material representing the industries, but they are acquiring such material with rapidity and rare choice. Then, too, the European museums are allowing replicas and publications of their valuables which can be secured at reasonable cost.

What designers and teachers of design are doing in New York can be done in other parts of the country.

Even the rural teacher who cannot have access to a good museum collection will find considerable published material for "creative research."

## THE LOYAL TEACHER

C. E. CHADSEY,

Superintendent of Schools, Detroit, Michigan

I believe in the sacredness of the cause for which we, the citizens of the United States, are fighting.

I pledge myself in every way in my power to render assistance to those in authority.

I will teach my children to love their country and train them to see that no sacrifice is too great, if by it humanity's cause may be furthered.

I will keep myself intelligently informed of the progress of the war and do all that I can both within and without the school room to extend intelligent conceptions of this war and the principles which we are defending.

I will at all times be on my guard against disloyal propaganda and will take immediate steps to stop the circulation of rumors which in any way may be harmful.

I will never forget that as a public school teacher I must be aggressively and unmistakably loyal and that as a teacher I have the opportunity to accomplish more in the way of sustaining and improving the morale of our citizens than is the privilege of most Americans.

I fully realize that my greatest duty is to be a true American and to inculcate in others true Americanism.

# Vocational Guidance in Secondary Education

An Important Report on a Plan for Making Vocational Guidance an Integral Part of American High Schools

No phase of the problem of vocational education has been subjected to such radical differences of theory and method as vocational guidance. Educators have been frankly at sea in determining the purpose and the scope of vocational guidance and in outlining workable plans for making it a part of high school work.

A report that is likely to stimulate thought and to bring about some semblance of unity in action has just been made public by the Commission on the Reorganization of Secondary Education. This report, which is made under the auspices of the National Education Association, has been published by the United States Bureau of Education as Bulletin No. 19 for 1918. The committee, which is headed by Mr. Frank M. Leavitt, of Pittsburgh, limits itself strictly to vocational guidance and eliminates from consideration a good deal of the psychology and general guidance that has been insisted upon by more early investigators.

The report says very clearly that "it is not the purpose of vocational guidance to decide for young people in advance what occupation they should follow, nor to project them into life's work at the earliest possible moment, nor to classify them prematurely by any system of analysis, either psychological, physiological, social or economic."

In the opinion of the committee "*vocational guidance should be a continuous process designed to help the individual to choose or plan his preparation for, to enter upon, and to make progress in an occupation.*" It will require a full, intelligent utilization of the present offerings of the schools and a closer adjustment between the school and worthy vocations. "For some children it demands a plan of continuation education and supervision in employment by educational authorities. It should develop an interest in the conditions prevailing in the child-employing industries and bring about improvement in those conditions. It should utilize the co-operation of all social-service agencies that can be of assistance. For society at large it should result in a more democratic school system, a wiser economy in the expenditure of school time, and a more genuine culture."

The committee holds that it is a false conception that teachers can look into the future and determine what each child should be and prepare him for that end. "Vocational guidance, properly conceived, organizes school work so that the pupil may be helped to discover his own capacities, aptitudes, and interests, may learn about the character and conditions of occupational life, and may himself arrive at an intelligent vocational decision. In other words, vocational guidance, while not ignoring the proper functions of personal counsel, emphasizes vocational decision by rather than for the pupil and prefers to ascertain his capacities, aptitudes, and interests thru, rather than before, contacts with vocational activities. Since we cannot look into the future, we must attempt to prepare young people so that they can make each decision more wisely when the need for such decision arises. Therefore, vocational guidance, rightly conceived, does not involve deciding for young people what occupation they should follow, nor projecting them into life's work at the earliest possible moment, nor classifying them prematurely by any system of analysis.

"Advice given by commercial agencies, or by persons or organizations or schools lacking sound educational philosophy and the social perspective necessary to conserve the interests of democracy, is neither safe nor adequate.

"The school must teach the youth not only how to adjust himself to his environment, but also how to change that environment when the need arises. Guidance that helps only a few individuals to succeed might produce a competitive system even more relentless than that of the present day. Vocational guidance should help in bringing about a co-operative solution of the problems of economic and social life, and should help the largest possible number of individuals."

The committee very rightly concludes that vocational guidance is dangerous on the one hand in the extreme claims of too zealous promoters and on the other hand in the un-

reasoning scepticism of ultra-conservative school men. Somewhere between these two extremes there should be found a reasonable program that will command the support and respect of educators.

## Types of Vocational Guidance Plans.

The committee found few accepted standards for making plans of vocational guidance and concluded from its study that practically all the plans are buttressed not by facts but by opinions. They are all very recent and are intended to meet the needs of three groups of children. These groups may be roughly classified as (a) Those children who leave school at the age of 14; (b) those pupils who remain four or six years beyond the sixth grade but who do not enter higher educational institutions; and (c) those who enter college or technical schools. The committee found that the first group differs widely in capacity, ambition and opportunity and is in need chiefly of employment supervision. Members of the group benefit also from instruction in occupational problems and are in need of compulsory continuation school work.

The second group seems to require guidance in the choice of courses of study, vocational information and help in finding suitable jobs. The third group most largely needs guidance in the choice of curriculum and of higher institutions which are to be attended. It also requires information on personal aptitudes, opportunities and duties.

The committee in describing the four types of guidance which are most commonly in use at the present time writes as follows:

### Employment Supervision.

"Excellent experimental work has been done in 'employment supervision.' This work has shown that for the sake of society as well as for the sake of young persons in employment, even more solicitous care should be given to them because they have entered upon the exacting duties of occupational life. That children are at work is no reason why they do not need education, tho they may need a different kind of education. The committee recognizes that these children should still be wards of the school system and continue to receive the benefits of its training and instruction thru part-time attendance at school to be required by legislation. It has been shown that they may be so guided in their labors that they will get much education out of their daily occupations, and that this is not likely to result unless they are carefully and intelligently supervised by the educational authorities. Such supervision tends to establish better co-operation between the schools and employers, and with labor unions as far as child labor is concerned.

"Whatever may be possible in the way of advancement for individual members of this group, the majority will enter, for a time at least, the ranks of the industrial army, and their ultimate successes will depend upon their ability to understand their conditions and to make the most out of the opportunity that these conditions present, both for work and for leisure. How has this been accomplished? A careful study of the occupations of the children of this group reveals the fact that, of necessity, there must be considerable migration from job to job. Some work is seasonal, some is only temporary, while some has no future and is so monotonous that it ought not to be long endured. While the results of this migration may be harmful, and frequently are, there are educational possibilities in such variety of occupation, and these possibilities are multiplied when the school authorities are in a position to control the changes to some extent, to prevent the individual from remaining too long in a 'dead-end' job, to advise against undue and unnecessary 'job hoboism,' and to counsel the individual whenever a change is made. The education that these young people get from their daily toil is greatly enhanced when the school authorities assume the responsibility of guiding and counseling them. At least one of the large cities has appointed a school officer whose title is 'employment supervisor.'

"In some places continuation classes are maintained

without exercising employment supervision as described above, and conversely in other places employment supervision is exercised without maintaining continuation classes. To secure the greatest returns from either, however, it has been found that the two should be linked together and it is preferable that they be directed by the same school official. Since employment supervision applies to persons of secondary school age, it should be developed in connection with both junior and senior high schools.

#### Vocational Information.

"Perhaps the most important phase of vocational guidance at present conducted in the four-year high school is that designated as 'vocational information.' Interesting experiments have demonstrated beyond a doubt that it is desirable to collect and to impart information about vocations, and to show the connection between these vocations and the various subjects of instruction in the high school program, and to do it in such a way as to cause the whole high school situation to take on a new aspect, both to the pupils and to the teachers. Even the academic courses have been vitalized by the vocational motive.

"Methods of collecting information about vocations and occupational life are numerous and varied. In some instances private philanthropic organizations have prepared studies of several occupations and presented them to the public school for distribution. In other cases a similar service has been performed by the local chamber of commerce or board of trade. Libraries have co-operated with the public schools in making such material easily available for the use of pupils.

"Some schools have developed credit courses in 'occupations.' During the past two or three years a number of books have appeared, some of which may be used as textbooks, and others as reference books. In these courses trips are made to industrial plants and business offices and a great variety of occupations and professions is studied. This work is in many places made a part of the course in community civics.

"Other schools are systematically devoting a part of the work in English to vocational themes, oral and written. By this method all the pupils in the school are helped to a thoughtful and intelligent attitude toward the problems of vocational selection and preparation.

"Other subjects in the program have been broadened in many schools so as to give an outlook upon industries and vocational life. Numerous plans are now employed for bringing the pupils into more intimate contact with men and women who represent the local business community. Among these are the following: Junior association of commerce and vocational clubs; talks on vocations by local business men and women; and systematic placement in temporary employment as a part of their education.

#### Placement.

"Placement increases the sense of responsibility of both the school and the employer for the success of the school-trained child in his early occupational life. It is especially important for children in group (b).

"In a few cities the employment departments of the Y. M. C. A. and Y. W. C. A. and free public employment bureaus work in hearty co-operation with the public schools. While often efficient, these bureaus serve only a small minority of the persons needing such service.

"Several cities have established school placement bureaus. The plans for such bureaus differ widely. In some places the machinery for registering pupils and positions is as elaborate as that of private employment agencies. In other places the bureau merely invites employers to consult them when in need of youthful help and urges pupils to consult the bureau before seeking work. Experience has shown that the school placement bureau must keep accurate records of its work in order that the bureau and the schools may become more intelligent in methods of placement and education.

"Whatever the plan, be it simple or elaborate, the school is the proper guide and protector of the child, and the best way in which to get a good position is thru the disinterested services of the school. The best results of placement cannot be secured, however, unless an organized effort is made to retain children in school as long as possible. Experience with school placement bureaus has demonstrated that no



ALBERT G. BAUERSFELD.  
Chicago, Ill.

On September 19th, Mr. Bauersfeld became supervisor of vocational education for the Chicago high schools succeeding Mr. William Roberts, resigned. Mr. Bauersfeld has been prominent in the Western Drawing and Manual Training Association and in the Vocational Education Association, the latter of which he is president this year. During the past five years he has been head of the department of woodworking at the Lane Technical High School.

city can afford not to have such a bureau, or if the city be small, to have the duties of such a bureau performed by the part-time service of a teacher or other school official.

#### Guidance in Choice of Curriculum.

"Guidance with reference to the choice of curriculum and electives within curriculums is now recognized as of great importance for all pupils in the secondary school, whether or not they are going to a higher educational institution. Too frequently is secondary education conceived entirely as training for some already chosen career. Early choices are regarded, however, in many schools as provisional and encouragement is given to the pupils to revise their early choice whenever they gain a clearer insight into their own needs, aptitudes, and capacities.

"For those who are to have an extended education reaching into the college or other higher institution, employment supervision and placement are obviously inappropriate, at least as far as the secondary school is concerned. The courses in 'vocational information' or 'occupations,' however, are proving valuable for these pupils. Such courses are and should be so taught as to have great civic and ethical value and the information they give cannot be obtained in college courses as at present organized. Furthermore, agriculture, commerce, and industry are calling more and more for college trained men and women, a fact that should be called to the attention of young people while they are in high school.

"High school pupils who can continue their education beyond the secondary school need accurate information regarding managerial and professional careers, the opportunities that they offer, the extent and nature of the preparation demanded, the financial resources needed for this preparation, and for the lean years of early professional service, as well as detailed advice regarding the various educational institutions where preparation may be obtained, together with the requirements and advantages of each."

The second half of the committee's report will be presented in the December issue of the Magazine. It includes the program which the committee proposes for immediate acceptance.

#### A CORRECTION.

The article on the "Use of the Triangle" in the September issue of the *Industrial-Arts Magazine* was written by Mr. E. R. Gilbert of the Department of Mechanical Drawing, Technological High School, Atlanta, Ga. The article was incorrectly accredited to E. D. Gilbert.

**ART EDUCATION AND THE FEDERAL BOARD FOR VOCATIONAL EDUCATION.**

*To the Editors:*

The September issue of the *Industrial-Arts Magazine* contains an editorial on "Vocational Training and Art Education" which raises doubt both as to the attitude of the Federal Board toward training in art for use in industry and as to the possibilities of any help for industrial art education from the Smith-Hughes Act. Since the article, well intentioned as it is, leaves impressions greatly at variance with the facts, I have taken the liberty amidst the press of other duties to prepare this statement for your valuable publication.

As the editorial in question is predicated largely upon my supposed attitude as Director (not Chairman) of the Federal Board, it is necessary for me to give some attention here to the quotation taken from an address of mine on "The Place of Art in Industry" given before the Eastern Art and Manual Training Association, 1916, and published later as a monograph by the National Society for the Promotion of Industrial Education. The Federal Board was not organized until July, 1917.

applied art for his calling should be given him as a valuable and necessary part of his trade equipment.

"Not art as an end in life but art as the means to a better and richer life. An awakened and an intelligent taste for all as consumers—higher ideals and greater skill in their execution for every producer. These are goals beyond which the American people will find not only larger economic prosperity but industrial as well as social uplift and well-being."

Finally, may I not add this as proof that the real facts are far removed from the fears expressed in the editorial: The Federal Board is so deeply interested in the question of the use of art in industry that the office has already started a study of the whole question which is to be carried on by one of the most prominent, able, and experienced champions of industrial art in the country. With the results of this study as a start, the Board *in possession of the facts* will be in a position to encourage the use of federal moneys for training in applied art which will bring results in better goods and more prosperous producers.—*C. A. Prosser.*

*Washington, D. C., Sept. 16, 1918.*



CLASS OF FIFTH GRADE BOYS, MENOMONIE, WIS., WITH GUNS MADE IN SCHOOL SHOP.

I still believe and, so far as I know, no one has yet combatted the statement that the organization of American industry for large scale production and the performance of specialized tasks means that if we are to succeed in producing goods with better design we must in some way select and train more talented designers. These we shall get only by the establishment of special schools of design for carefully selected students of interest and aptitude. Each school should be established in the center and atmosphere where the industry is carried on extensively so that the training may be real and practical, the students available and the opportunities for employment certain. In this way, we will get results and not by academic discussions of art training for industry or by general art schools.

At the same time, no one who believes in industrial education as the social and economic hope for the future would neglect the great opportunity which the industrial and trade training of both sexes presents for teaching better workmanship, better finish, better form in the production of goods. This we shall get gradually as teacher training provides better instructors for shop and classroom.

It is rather unfortunate that the writer of the editorial which prompted this statement did not quote more fully from my monograph on "The Place of Art in Industry" where this statement is made of which I know the editor must most heartily approve:

"How shall we get art into industry so that the output of our schools and factories may respond to a more intelligent demand for better goods? Wherever a craft or trade presents an opportunity for the worker to apply the artistic in the doing of the practical, to exercise the creative faculty, to use art as a tool in trade, training in

**GUNS MADE IN SCHOOL SHOP.**

The accompanying picture shows a class of fifth-grade boys of Menomonie, Wis.

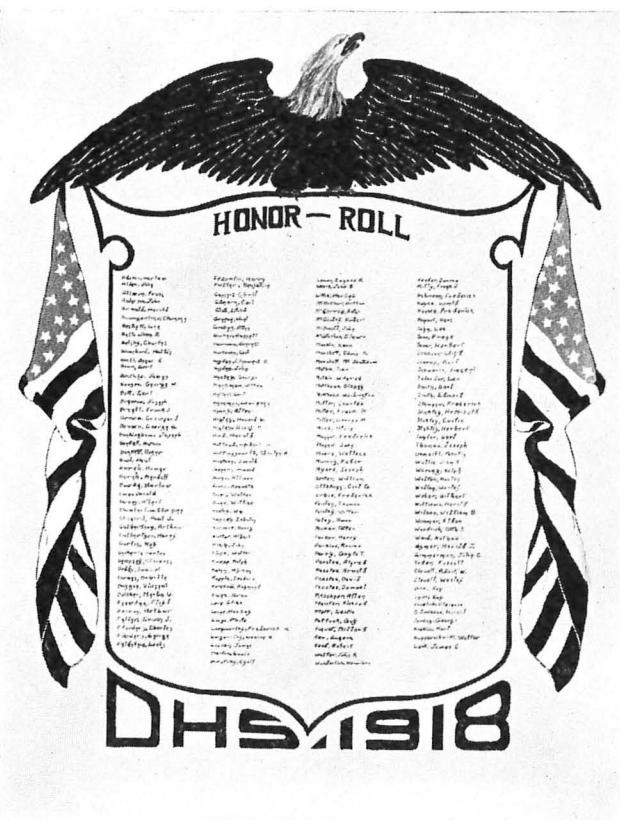
Each boy has made his gun complete by first working out the gun stock from one-inch basswood or pine, then fastening the barrel to it with round head screws. The barrels are made from broom sticks which the boys brought from home.

The guns, when assembled and painted black, are appreciated very much by the boys and they enjoy drilling with them. About two months after the guns were finished and taken home a squad of four boys was seen taking a long march with their guns two miles or more from their homes.

The two men standing with the class are Mr. Franklin and Mr. Stewart. They were students in Stout Institute in 1917-18 and at this time were teaching this class in bench woodwork.—*F. L. Curran.*

**HOME GARDEN WORK OF CHILDREN IN CHATTANOOGA, TENN.**

The subject of home gardens first received public attention in Chattanooga in 1915 when it was pointed out that valuable energy was going to waste in the city thru the waste in unused land about homes and large areas of unimproved ground within the city limits which were not producing. Added to this it was found that hundreds of children were unemployed after school hours, on Saturdays and during the summer vacation who might be engaged in pleasant and profitable work. It was believed that here lay an opportunity for teachers and pupils to become better acquainted with nature and to have a greater respect for nature's laws as they are expressed in plant life. The introduction of the



#### HONOR ROLLS OF THE DUBUQUE, IA., HIGH SCHOOL.

The designs were made by freshmen students of the art department of the high school under the direction of Miss Mary A. Brownson, art director of the Dubuque schools. The cards measured 22 by 28 inches. One is worked out in black and white, the other in colors.

work without adequate financial support at the start was a serious undertaking, but teachers and pupils were enthusiastic and willing to undertake the work. The parent-teacher association and interested individuals assisted in providing the funds for the first summer's work and during the following seasons this expense was assumed by the education department and friends of the schools.

Instead of trying to include every child in the plan of supervision the initial efforts were restricted to the fifth and sixth grades. It was felt that children below these grades did not possess the right combination of energy and enthusiasm to carry them thru the planting, cultivating and harvesting periods.

The subject was presented to all pupils who were to receive invitations to participate in the garden work. Plans were outlined for the teachers who were willing to undertake the service and finally the mothers co-operated in the carrying out of the plan.

The teachers, in preparation for their duties, studied outlines and suggestions on gardening issued by the Bureau of Education and presented the facts in story form to the children and their mothers. Miss Gertrude Wright was elected supervisor of gardens and each district appointed a mother as assistant. The children were organized into garden clubs and a friendly interest was manifested by all the children.

The lessons included a study of soil, variety of vegetables capable of being grown, care and cultivation of plants, and classification and standardization of produce. All the children were asked to conduct the work in a businesslike manner and to keep accurate records of receipts and expenditures.

From the first of June to the first of September, six teachers were employed for supervision and the care and collection of mature summer crops. During the first year five hundred children spaded and cultivated backyard lots. The gardens ranged in size from four square feet to a full acre and the total under cultivation included twelve acres. The vegetable yield was valued at \$2,500, or an average of \$208 an acre.

In 1916 the same system of organization and conduct of

work was continued with the co-operation of the Board of Education. This time the children of the fifth, sixth and seventh grades were included. Where children had no available garden space the cultivation of window boxes was encouraged. During the gardening season eight teachers were employed as inspectors and 718 children volunteered to add home gardening to their regular duties. An aggregate of 13.54 acres were cultivated at a total value of \$4,086, or an average of \$301 an acre. The largest sum realized by an individual pupil was \$164. In addition to producing enough to satisfy the needs of the family, many of the children harvested a surplus which was canned for family use or sold.

In 1917 the work was extended to include the pupils of the eighth grade. Up to this time practically all the attention was given to the cultivation of edible plants but with the third year the program was changed to include fruits, flowers and shrubbery. During the year the children produced more than \$18,000 worth of vegetables.

A story of the work in Chattanooga would not be complete without a report on the work for 1918. There were 3,114 gardeners with a total acreage under cultivation of 181½ acres. The receipts amounted to \$8,993 and the expenditures reached \$247, with a total realized sum of \$19,067. There were 23,920 quarts of vegetables canned for winter use.

The results of the home gardening work have been many. It has stimulated a desire on the part of the teachers to become better acquainted with plant and insect life and has brought them into close relationship with the home so that better teaching has been possible in the classrooms. The children have been able to contribute to the life and happiness of the domestic circle, the soil has been improved and the land made presentable thru the removal of refuse and weeds. The schools have found that it is just as important to teach children how to do practical things as it is to teach them facts and figures.

It is the hope of the school authorities to do for the uncultivated areas of the city what agricultural colleges have done for the state. Not all the children have been enlisted in the work and not all the backyards and vacant lots have been placed under cultivation but it is felt that the efforts

of the workers are sufficient recompense and encouragement for the time and effort. The work has been conducted with the encouragement and support of Supt. C. H. Winder.

#### FOOD AND THE SCHOOLS.

The United States Food Administration, like other governmental agencies for winning the war, has sought the co-operation of teachers and pupils in carrying out its program. The Collegiate Section of the Food Administration has prepared a brief account of its program which is based on an appeal to the intelligence of the people looking to voluntary support. The success of the appeal for the past year has been most gratifying and the schools will be asked during the coming year to continue their assistance.

Co-operation with the colleges was the first step leading to the program. It was the hope that they, thru their departments of home economics or special courses, might give to college women sufficient training for leading the communities in food work. This hope has proved well founded in view of the fact that forty thousand enrolled in the courses. Twenty thousand certificates have been issued to college women who completed the prescribed work.

After the college lessons had been distributed, high school teachers asked that suitable sets be prepared for high school use. To meet the demand a book was prepared for the use of teachers in high and elementary schools, high school students and the general public.

Following this, the National Education Association asked the Food Administration for material to be used in the schools and urged that a body of representative authorities in school matters be appointed to advise on the general policy for the schools. In compliance with this request an advisory council composed of the highest authorities in city and state school circles was appointed to act as expert advisors. Two books have been prepared for use in the elementary schools. They have been written by Eva March Tappan and Katherine E. Dopp and will be ready at an early date.

The Food Administration is co-operating with the schools in the preparation of a definite school program for food conservation during the war in which teachers can perform a useful and practical service.

#### WAR WORK IN BUFFALO.

The Committee on Education and Special Training of the War Department commandeered four Buffalo schools—the Technical High School, Elm, Seneca, and Peckham Vocational Schools—during July and August as training centers for a National Army Detachment of "fighting mechanics." Machine shop practice, electrical construction, automobile mechanics and driving, oxy-acetylene welding, bench wood-work, carpentry, plumbing, and blacksmithing provided the trade subject matter. Sixteen commissioned officers were in charge of the men, numbering between eleven and twelve hundred. The reaction of the summer's work upon the Industrial Education Department is significant in several respects.

In the beginning of the undertaking, the instructors were nerved to do their best by a keen realization of the fact that to do less would belie the slogan, "Buffalo Never Fails." The successive Liberty Loans, the Red Cross campaigns, the War Savings Stamps drives, had given cumulative proof that the Buffalo Department of Public Instruction was not only patriotic in sentiment but also aggressive in action. The vocational and technical schools had kept pace with their neighbors in all these activities but here was a task exclusively their own. They set themselves to win the right to be classed as essential institutions in the educational and industrial life of the city.

As in the shops and factories the first requirement was an immediate expansion in equipment and working force. The use of businesslike methods resulted in the purchase of tools, the installation of machines, and the hiring of competent instructors in time to have every shop ready to receive its quota of military students on July first. Many of the new instructors proved to have exceptional ability, practically all did satisfactory work, but it is with the regular teachers that this discussion is principally concerned.

In the beginning they had faith in the possibilities of short intensive training but "faith without works is dead." At the end of the eight weeks their faith had become a living



JOHN O. STEENDAHL,  
Atlanta, Ga.

Mr. Steendahl, who assumed the office of director of vocational education for Atlanta, in September, is a native of Wisconsin and a graduate of Stout Institute. He has taught in the manual arts department of the high school of La Junta, Colo., Pocatello, Idaho, and Portland, Ore., and during the past four years was director of the vocational department of the schools in Menomonie, Wis. He has been a contributor to educational periodicals and has prepared a number of bulletins and monographs on industrial arts.

knowledge that more than justified their early confidence. Among the soldiers were men of education and of considerable industrial experience. They responded almost without exception to every effort put forth by their instructors and the progress made by the entire rank and file was an inspiration. With such pupils no real teacher could fail to shake the dust out of his methods and to freshen them with all the ingenuity at his command. That every man did so is abundantly proved by the testimony of the federal officials and of the soldiers, many of whom had previously been teachers. The schools did a real job in a workmanlike manner, but, as in all good vocational practice, the product was not the main issue. For the instructors the eight weeks after they were called to the colors in July saw the finest piece of professional improvement work conceivable.

The publicity incident upon the training of a National Army Detachment is proving of great value in acquainting Buffalo people with the opportunities available in technical high school and in the vocational schools. They looked at these local institutions thru the eyes of strangers and in many cases saw them for the first time. When a public school dons the uniform it attracts attention. The interest so aroused shows itself in an increased attendance at technical high school and in the vocational schools of 18.6%.

As a test of the practical nature of the equipment, an unparalleled opportunity for increase in professional efficiency, and a source of healthy publicity, a National Army Training Detachment should be welcomed by every industrial school system in the country.

#### METROPOLITAN MUSEUM OFFERS HELP.

The Metropolitan Museum of Art, New York City, has recently made a radical extension in its policy of placing all of its exhibits at the disposal of art students, manufacturers and industrial designers. The trustees of the museum have recently appointed to membership on the staff, Mr. Richard F. Bach, who has been recently an editor of the Good Furniture Magazine, and who is now professor of industrial art at Columbia University. It will be Mr. Bach's especial function to assist designers, manufacturers and others interested in industrial art in locating and utilizing the enormous resources of the museum for the betterment of American industrial art.

The Metropolitan Museum has been a leader in a movement that has greatly widened the function of art, scientific and industrial museums so that they have become

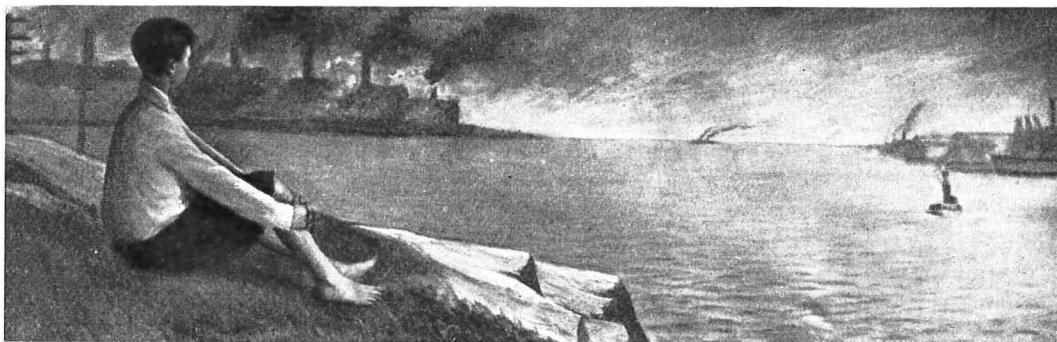
more than mere storehouses of valuable collections. The movement is similar to that which has popularized the public library and has made it one of the most potent educational and recreational factors in American cities. The museum has been no less progressive than the library and its ideal of democratic service to the greatest number has been raised considerable in recent years.

In the opinion of the authorities of the Metropolitan Museum, it is of great importance that every effort be expended during the present year toward maintaining the arts of peace and of improving and propagating them so that they may be of value to our people at large now and when our millions of returning fighters will have re-entered their normal social and vocational lives. The museum has an enormous amount of material of the highest art value which may be made directly useful to designers and producers, especially of furniture, fabrics, floor coverings, clothing, metal-work, woodwork, jewelry, laces and other industrial art objects. Mr. Bach as director of the industrial art department will be ready to co-operate and to assist interested persons and organizations in using the collections of the museum.

The course of study comprises for the first year trade English, mathematics, theory of trade teaching, trade practice, teaching covering one hour each week for thirty weeks. In the second year the same amount of time is to be devoted to trade drawing, science, theory and administration of vocational education, and advanced work in trade practice teaching. In addition to these, there will be observation of teaching and conferences.

The teacher training work for the state is in charge of Mr. D. J. MacDonald, formerly professor of vocational education in the University of Indiana. Mr. MacDonald will have his headquarters at the State University and will have a corps of assistants working out from the center to all the important cities of the state. At present classes have been established at Cincinnati, Dayton, Springfield and Middletown.

*The city of Cincinnati, O., with the aid of the continuation school and the local Council of Defense carried out an interesting experiment in food conservation during the past summer. The continuation school utilized the buildings erected for public*



MURAL PAINTINGS IN THE NEW OLIVER SCHOOL, LAWRENCE, MASS.

#### OHIO ADOPTS TEACHER-TRAINING PLAN FOR VOCATIONAL TEACHERS.

The Ohio State Board has adopted, with modifications, the plan for training industrial teachers prepared by Dean W. P. Burris of Cincinnati, for use in training centers of the state. Centers have been established at the University of Cincinnati, Cleveland School of Education and the Municipal University at Toledo.

The plan involves the use of the buildings and equipment of the McMicken College of Liberal Arts, the College of Engineering, the College of Commerce and the College for Teachers of Cincinnati University. Certain courses in these departments are at present in line with the plans of the state board and others are to be modified to meet the needs of industrial workers and the approval of the state director of teacher training. Physical education and hygiene are to be included in the courses offered.

It is assumed that those who are to be trained to teach industrial and technical courses must be drawn mainly from the industrial workers who have mastered trades and who possess the qualifications necessary to successful teaching. In Cincinnati the greatest need is for machine tool workers so that attention is to be given at the beginning to the training of teachers in the machine tool field.

markets as centers for housewives' classes in food conservation. The classes were conducted by household arts teachers and were the means of reaching thousands of mothers who came to learn about the most approved methods of preparing and saving food. The work was in charge of Miss Mary Conway and Miss Charlotte Ullrich.

Cincinnati, Ohio, has been selected as one of the seven districts of the United States where work is to be carried on for the re-education of wounded soldiers.

The district of which Cincinnati will be the center includes Ohio, Indiana and Kentucky. The men will be taught in small, selected groups or individually and will be made up of those who formerly lived in the vicinity of the central district. It is planned to make use of the knowledge and skill acquired by the men before engaging in military service.

*The Carlisle Indian School at Carlisle, Pa., which was recently taken over by the government as a reconstruction hospital for injured soldiers, is situated on a site which has an interesting history. During the Revolutionary War the location, known as Washingtonburg, was used as a training center for troops and as a celebrated munitions plant. Major Andre was held a prisoner in the old guard house, still standing, which was built by Hessian prisoners. During the Civil War it was under fire by General Lee's artillery. The institution was, during its existence, not only an academic school but also a trade school and offered a variety of industrial and household courses.*

# PROBLEMS AND PROJECTS

The Department of Problems and Projects, which is a regular feature of the INDUSTRIAL-ARTS MAGAZINE, aims to present each month a wide variety of class and shop projects in the Industrial Arts.

Readers are invited to submit successful problems and projects. A brief description of constructed problems, not exceeding 250 words in length, should be accompanied by a good working drawing and a good photograph. The originals of the problems in drawing, design, etc., should be sent.

Problems in benchwork, machine shop practice, turning, patternmaking, sewing, millinery, forging, cooking, jewelry, bookbinding, basketry, pottery, leather work, cement work, foundry work, and other lines of industrial-arts work are desired for consideration.

Drawings and manuscripts should be addressed: The Editors, INDUSTRIAL-ARTS MAGAZINE, Milwaukee, Wis.

## LINEN CHEST.

W. L. Mathews, J. Sterling Morton High School,  
Cicero, Ill.

The linen chest offers a problem of an advanced nature suitable for a place in the course of study of those schools offering a considerable amount of woodworking (cabinet making).

The main idea occurred to me as a result of working up a design which would contain drawers and would be similar to a chest in line. The illustration indicates much clearer than any word picture could possibly do the result.

The height of the chest is correct for a seat (eighteen inches). The lid opens to give access to the compartment below, which is practically five inches deep.

Below this are four drawers which will be about three and one-half inches deep, the depth depending upon the thickness of the stock used in the bottom. The drawer front is made one-half inch longer and wider than the drawer space. The front is then rabbeted leaving this one-quarter-inch projection on the edge and end also one-quarter inch thick. The front corners are rounded. The drawing shows only one front in place A. The drawer details are omitted.

The front of the chest was built up. The pieces 1 and 2 and similar (front view) are doweled to the drawer rail 3, which is separate from that part of the panel frame which may also be termed the drawer rail.

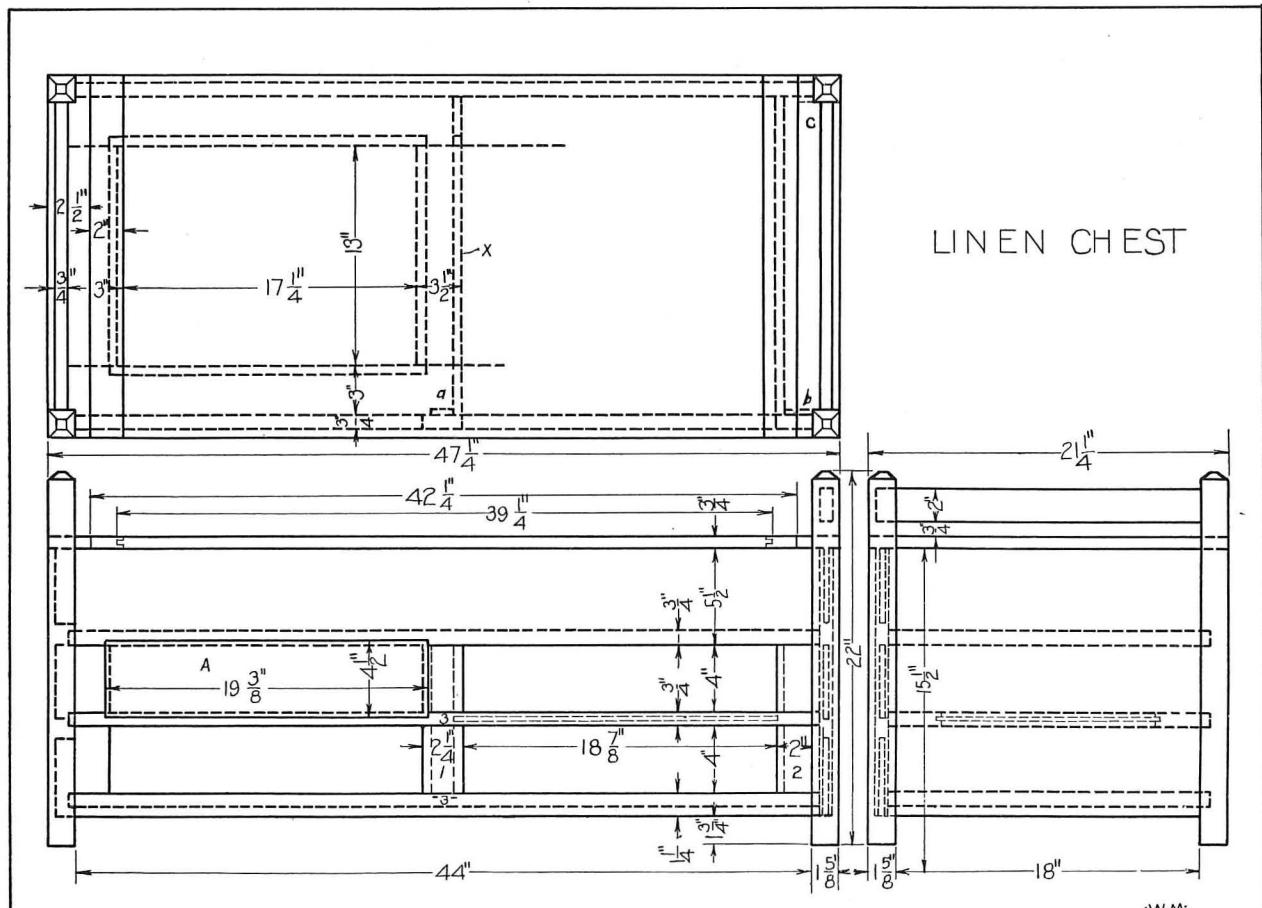
A word further might be said about the dust panel and



Linen Chest.

frame below the lower drawers and between the two sets. The panel frame was designed to act as drawer runners also. The drawer guide (X top view) may be any width up to four inches and is secured to blocks placed at a-b-c.

The wood used in the chest was mahogany for the outside



DETAILS OF LINEN CHEST.

and Spanish (Mexican) cedar for the interior parts. The panels and drawer bottoms were three-sixteenths inch rotary cut cedar.

In the staining an antique mahogany was desired and considerable difficulty was experienced in getting this until—by mixing two powder stains—an antique (which by itself was too dark and lacked richness of tone) and a mahogany red until the desired shade was obtained. A small quantity of these stains was also mixed with the shellac. This mixture left the surface rather rough. To overcome this 00 sandpaper was used, followed by rotten stone and oil which produced a beautiful rich red brown.

An improvement could be made on the knobs shown by using instead a cut glass pull of hexagonal or octagonal style.

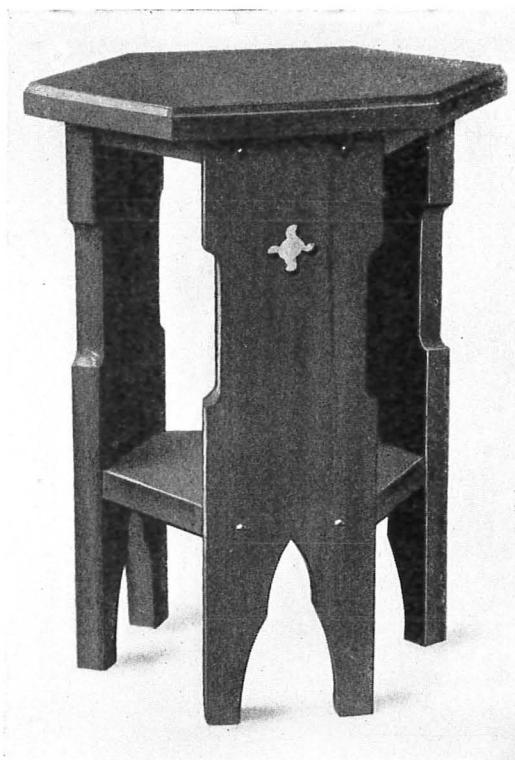
#### A TABOURET FOR UPPER GRADE CLASSES.

Francis J. Gottwald, Detroit, Mich.

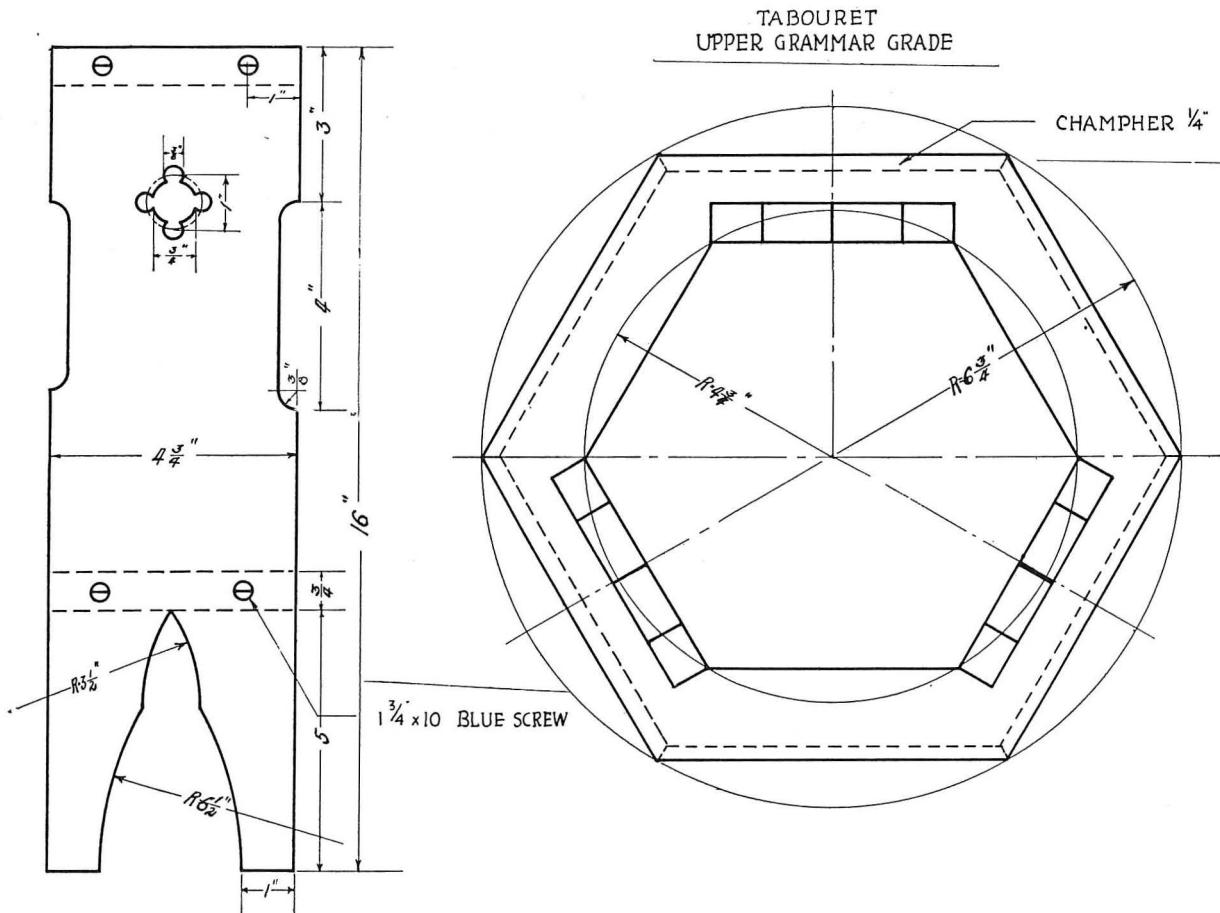
Tabourets have become very popular with boys. This is due to the usefulness of the project in the home, and to the variety of tools and operations used in the construction.

The tabouret shown here is simple, easily assembled, and is within the ability of most boys to construct, at the same time involving the use of several important tools and processes. The turning and coping saws are used to cut the curved parts of the design, while the use of the brace and bit, as indicated, demonstrates the possibilities of this kind of tool in simple design.

With the aid of the center line and one true edge, lay out the design with the try-square and dividers. The bottoms of the legs should be cut out with the turning saw, the large curves then smoothed off with the spoke shave, and the small curves with the cabinet file. Use the coping saw and chisel to cut out the design on the side of the legs. In making the



Tabouret.



DETAILS OF TABOURET.

circular design in the upper part of the legs, the brace and bit are used, as explained by the following procedure: First lay out the straight line intersecting the center line at right angles, as shown by the drawing. With the point of intersection as a center, describe a 1" circle with your pencil compass. Where this circle intersects the straight lines, bore  $\frac{3}{8}$ " holes. At the center of the 1" circle, bore a  $\frac{3}{4}$ " hole, cutting the  $\frac{3}{8}$ " holes—and the design is complete. Bore the holes straight and be sure sharp bits are used.

When the legs are cut out and properly finished, the three hexagonal pieces should be cut to dimensions. Observe that when fastening together two hexagonal pieces of different size, lines connecting opposite vertices should be drawn on the bottom of the larger piece, and the smaller piece so placed that its vertices coincide with points in these lines. Fasten together with  $1\frac{1}{4}$ " by 10 bright head screws. The tops of the legs are then fastened to the smaller piece; the lower hexagonal piece is placed in position, and fastened to the legs as shown by the drawing. Care must be used to place the legs in perfect line with one another.

If the tabouret is made of pine or gum use  $1\frac{3}{4}$ " x 10 blue head screws. If of oak use  $1\frac{1}{4}$ " x 10 bright head screws countersunk and the holes covered with  $\frac{3}{8}$ " oak buttons.

#### Stock List.

Material: Pine, gum or oak.

Parts	No. of Pieces	Size
Legs	3	$\frac{7}{8}$ " x $5\frac{1}{4}$ " x 17"
Small hexagonal pieces	2	$\frac{7}{8}$ " x 10" x 10"
Top	1	$\frac{7}{8}$ " x 12" x 14"

#### TEACHING A PRINTING CLASS TO RECOGNIZE THE d's, p's, b's AND q's.

M. Norcross Stratton.

At the start the boys are given sticks and are then given one each of the type letters d, q, p and b, which they place in their sticks, nicks up, in the order named. I then present the lesson in the following manner—"What do you notice about these letters?" Various answers are made until the desired fact is brought out that each one has a stem and a loop. We now name the letters in the order in which they are placed in the stick—"When you look at these letters in your stick what seems to be the matter?" The desired answer soon obtained is—"The stems are all on wrong." The stem of the "d" is down, and that of the "q" is up, etc.—"Yes, that is

the trouble, boys, they look as if they had slipped out of place. Let us make believe that the stems are loose, that they may be moved. Suppose we could push the stem of the first letter up—can you imagine that the stem is pushed up? Put your finger on it and make believe that you are pushing it up. What letter would it be then when you look at it?" "It would be a 'd'." It is a "d". Then we try pushing all the stems up or down as the case may be. "What do they look like with their stems pushed up or down?" "They look like what they are then, d, q, b and p." "Now, in what position are the nicks?" "Nicks are up." "Can you recognize these letters then, when the nicks are up?" They think they can. More practice in holding letters of this type, nicks up, and "pushing" the stems makes them sure of it.

"Now can we make a rule for recognizing these letters?" After a few trials the boys adopted the following rule—Always hold the nicks up. The stems are wrong but we make believe push them up or down and if the letter then looks like a "d," it is a "d" and if it looks like a "q" it is a "q," etc.

By this method our boys have learned to mind well their "p's and q's."

#### A SLED WITH BENT RUNNERS.

M. A. Neudecker, Instructor in Manual Training,  
Albert Lea, Minn.

The approach of cold weather and the possibility of winter sports make the construction of a sled an interesting problem in the school shop. The sled suggested in the accompanying drawing has been made successfully in the writer's classes.

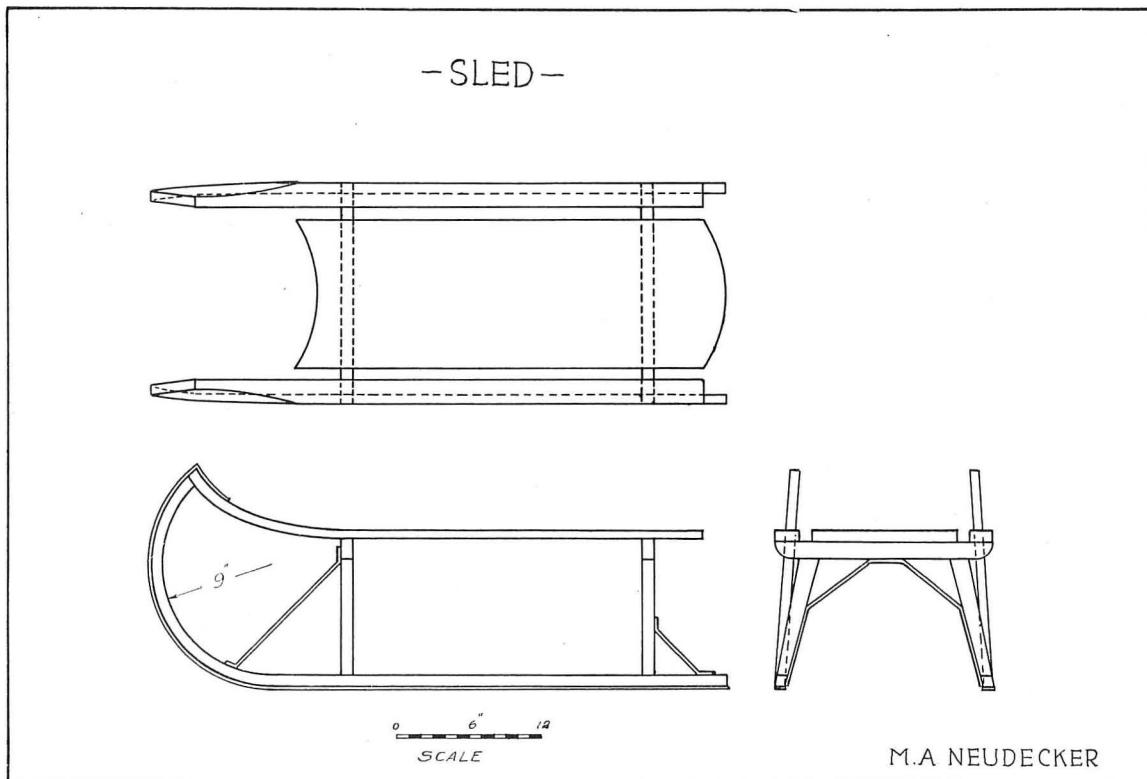
It is best made of oak which has not been kiln dried. To bend the runners they must be steamed for several hours.

A home-made device consisting of a box about three inches high, three inches wide and three feet long will serve quite satisfactorily for steaming the wood. It is not necessary that the entire length of the runners be steamed.

After the wood is removed from the box, it should be bent around a form of the proper shape and should then be left to dry several days. All iron for shoes and braces on the sled is 3-16" by  $\frac{3}{4}$ ".

#### HOW TO MAKE A BENCH CHISEL HANDLE WITH LEATHER CAP.

R. B. Gregg, Purdue University, Lafayette, Ind.  
A bench chisel handle with a leather cap is a very good



DETAILS OF SLED.

exercise for the woodturning lathe. I would suggest (if it be used as a school-room exercise) that it be about the sixth or seventh exercise in woodturning. The material may be hickory, cherry, hard maple, or a similar hard, close grained wood; leathers for the cap may be pieces of old leather belting. If such be used they should be scraped on both sides to remove grease and dirt before glueing. The leathers are cut about  $1\frac{1}{4}$ " square and a  $\frac{3}{8}$ " diameter hole punched or cut with gouge thru center.

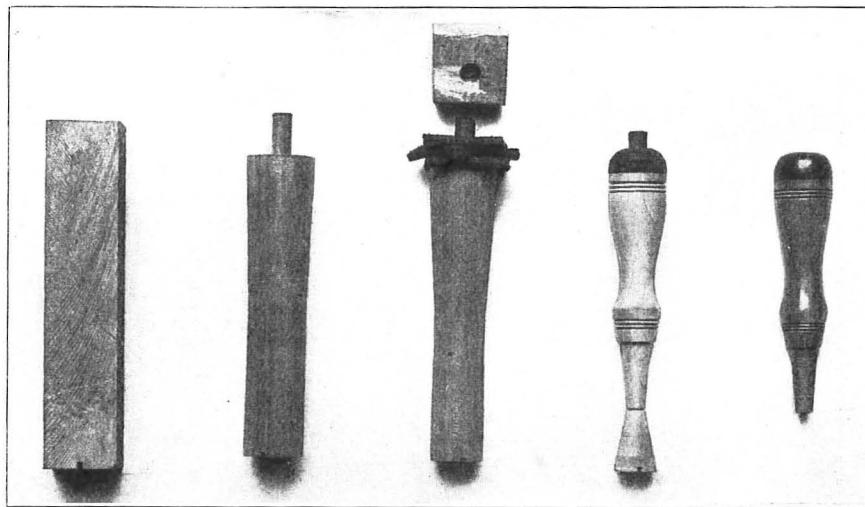
The fork center end of stock is saw-marked. This is to avoid splitting and to give a better hold on the turning (see illustration). About four leathers should be glued around the stem; use a clamp and a block to hold the leathers compactly against the wood.

When dry, mount on lathe and at high speed turn to shape and dimensions. The leather may be turned, sandpapered and polished the same way and manner as the wood.

#### A STATIONERY RACK FOR MILITARY CAMPS.

John J. Metz.

The stationery rack illustrated on this page was designed according to suggestions received from Mr. Frank Gross, Jr., Knights of Columbus secretary, at Camp Dodge, Ia. The rack will be welcome, not only to the overworked secretaries of the K. C. halls, but to their equally overworked brother secretaries in the Y. M. C. A. buildings, the Salvation Army booths, and the Red Cross hospitals. With the rack fastened to the wall, at some convenient place, the soldiers can help themselves whenever they need stationery,



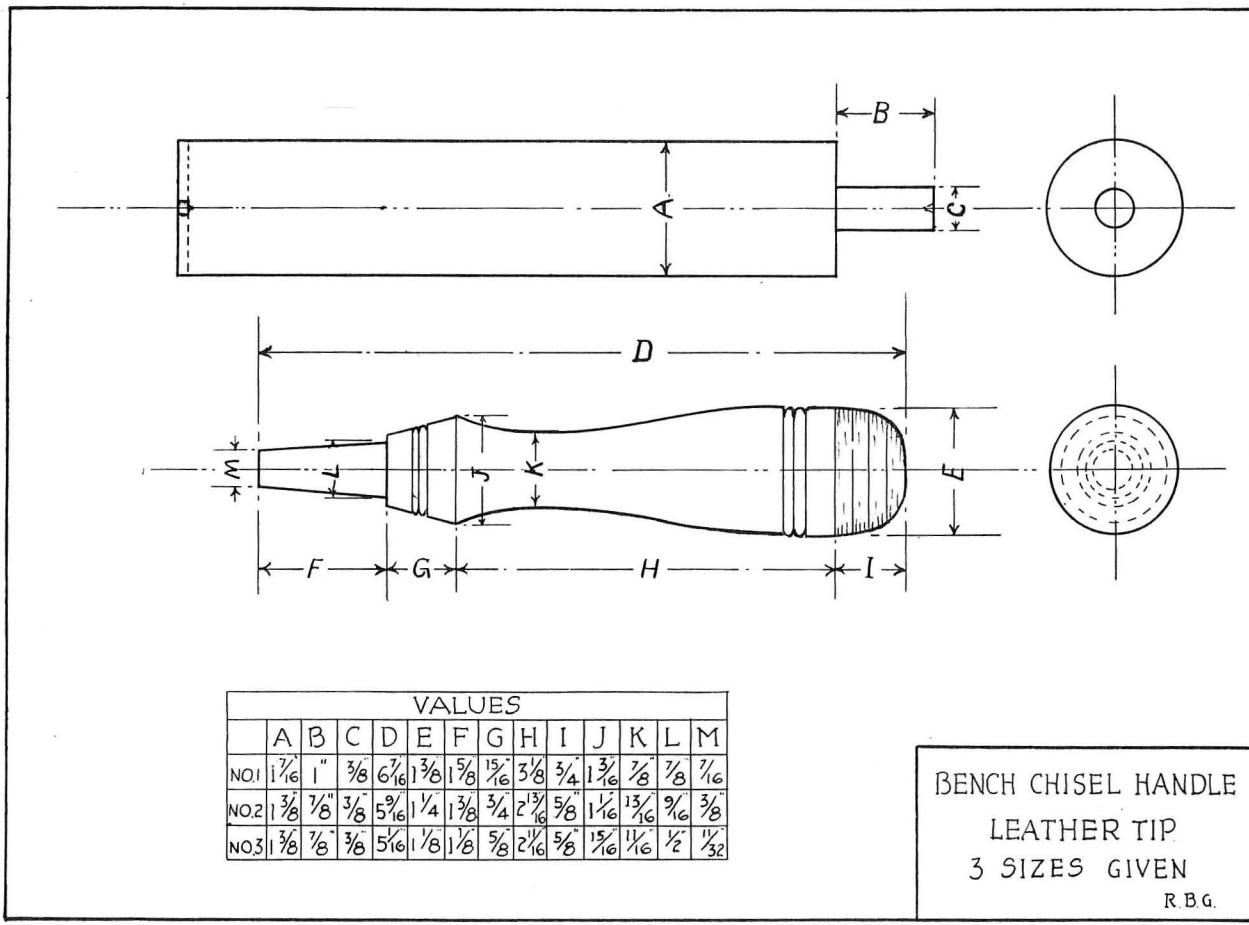
Steps in the Making of a Bench Chisel Handle.

without troubling the secretary. The latter thereby gains valuable time for more important duties.

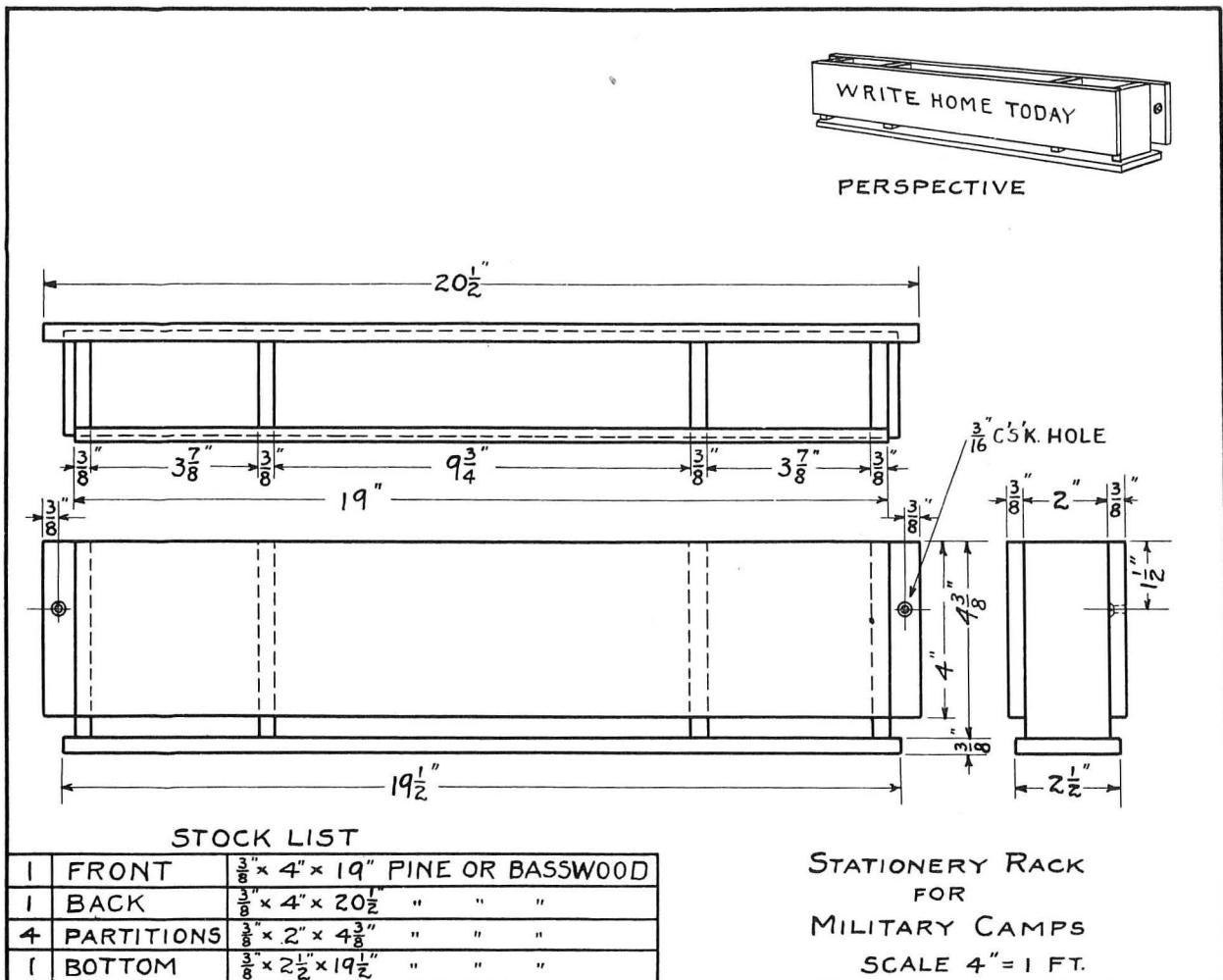
The schools will find the rack an easy problem for the eighth-grade pupil in the manual training classes. Either pine or basswood can be used for the project. The cost per rack will not exceed twenty cents, and can be reduced by making the racks in quantity. Green weathered oak stain, followed by two coats of shellac, makes a desirable finish.

#### A NEW WORK FOR THE WOMEN.

With the initial participation of American soldiers in the great European struggle and the listing of the first casualties among the overseas soldiers the United States was brought face to face with the problem of re-educating returned wounded soldiers. Preparations were begun early in the struggle to begin



DETAILS OF BENCH CHISEL HANDLE.



DETAILS OF STATIONERY RACK. DESIGNED BY MR. METZ.

the work and a number of great base hospitals were established in the eastern section of the country. To these early hospitals have been added others in the south and middle west where the location, climate and facilities were satisfactory.

The problem of reconstruction work has many angles which involve not only the re-education of the men for employment purposes but also the training of teachers and reconstruction aides for occupational and physio-therapy.

Surgeon General Gorgas has issued a call for 1,500 women for physical reconstruction work and one thousand for occupational reconstruction duties. These women have their expenses paid and receive a salary of \$50 a month in the United States, and \$60 in France.

To meet this emergency, Reed College at Portland, Ore., was designated as the western training school, the School of Physical Education at Battle Creek, Mich., for the northwest, and Walter Reed Hospital, Washington, Johns Hopkins University, Baltimore, and Columbia University, New York, for the eastern section of the country.

Reed College was the first institution west of the Atlantic to attempt this new work and it is now the largest in the United

States or Canada. A class of 186 was graduated in September, of which one-half were accepted for overseas work.

The colleges have extended the benefits of the schools to additional students thru the forming of new classes in physical and occupational reconstruction work. These classes, which began in October, are open to mature women who have the requisite physical, educational and mental qualifications and the course covers four months. The physical course covers anatomy, hygiene and sanitation, massage, mental hygiene, hydrotherapy, gymnastics, first aid and pathology. The occupational course covers forms of handicrafts for the handicapped.

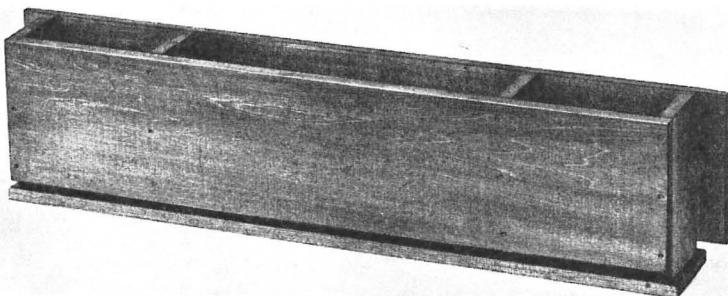
#### TEACHERS' ANNUAL INSTITUTE AT AURORA, ILL.

The combined meeting of the county teachers of Kane and Kendall Counties, Illinois, was held in the East High School Building of Aurora, Ill., on August 26 to 30. It was marked by a large attendance and a spirit of earnest application to the work in hand.

The changed conditions, brought about by the war, relegated many familiar time-worn topics to the scrap heap and in their place the demands of the Red Cross, Americanization, woman's work, the new industrial demands for trained workers, the need for special training in the rural schools to fit the pupils for a larger success in agricultural pursuits and the preparation for meeting the conditions "when the boys come home" made the sessions of the institute very practical. Rev. Frank Beardsley, of Aurora, delivered the principal address on "Rehabilitation of Partly Crippled Men." One day was devoted to a critical study of the work being done in Mooseheart, where a class of enlisted men are being trained in concrete construction for war work.

Supervisor A. C. Bloodgood, of Aurora, discussed the need of skilled mechanics as shown by government investigators.

Among the invited speakers on manual training work were H. J. Barber, L. Day Perry and Leonard Wahlstrom, of Chicago. Mr. A. C. Bloodgood, of Aurora, had charge of the program and the visits to the industrial plants.—H. J. Barber.



Stationery Rack.

## NEW BOOKS.

## Mechanical Drawing Problems.

By Edward Berg an E. F. Kronquist. Cloth, 223 pages. Price, \$1. The Manual Arts Press, Peoria, Ill.

This book appeals to us as the most practical and teachable book on drafting that has been offered up to the present time for use in high schools. The authors, who are teachers in a Milwaukee high school, have grasped fully the present demand for instruction in drawing which shall be prevocational in type and have sensed the teaching difficulties arising from widely differing conditions in the preparation of teachers, size of classes, etc.

The book presents a complete course suitable for two years of work, grouped according to semesters and graded in such a manner that the student who cannot complete the course will have received full value of the work he has done. Each section contains a group of supplementary problems which may be substituted where conditions warrant, or which may be used by fast workers.

Each problem is presented in the shape of a specification, which states the problem, and a layout sheet which suggests the method of procedure and serves as an object lesson for the careful execution of the work. The student must in each case think out the problem before he can put it on paper and the teacher is free to devote himself to the solution of personal difficulties, criticisms and suggestions.

Good judgment has been shown in choosing the problems from most typical types of drawings used by wood workers, machinists, plumbers, sheetmetal workers and builders. The grading is close and logical and the required mathematics is easily within the student's grasp.

## Boy Activity Projects.

S. A. Blackburn. Cloth, wide octavo, 144 pages. Price, \$1.25. Manual Arts Press, Peoria, Ill.

The author has filled a very real need in bringing together a group of sixty problems consisting of indoor and outdoor gymnasium apparatus, play and sport devices, camp furniture, pet animal houses, and miscellaneous articles that are of interest to boys. With one or two exceptions the drawings call for articles which are standard in design and construction and approximate the commercial articles in utility. Complete working directions, stock bills and tool lists accompany each of the drawings.

The book reflects very clearly the vocational trend of manual training and recognizes the value and need of carpentry problems.

## Industrial Experience of Trade School Girls in Massachusetts.

By May Allinson. Cloth, 275 pages. Price, \$0.80, net. Women's Educational and Industrial Union, Boston, Mass.

Boston has a department of research which makes a study of the effect of certain industries upon the well-being of women. The present volume is a study of the industrial experiences of trade school girls in Boston and Worcester. The authors have tried to show that the problems confronting the trade schools are: (a) The girl who comes for training, (b) the industries for which it trains.

Tho there is a full text much of the information gained in a study of eleven months has been classified and grouped in 147 tables. In these tables may be seen at a glance: Age of girls entering these schools, previous school training of these girls, length of stay in trade schools, average weekly wages after leaving school, average number following up the trade taught.

Among the more important conclusions are these: Trade training must develop in accordance with the trend of industrial development and there should be a wider range of trades from which a choice may be made.

## Engineering Drawing.

By Thomas E. French. Second edition. Cloth, 329 pages. Price, \$2.50. McGraw-Hill Book Co., New York, N. Y.

Since it was first issued in 1911 French's Engineering Drawing has enjoyed a popularity in technical schools that is unequalled by any other text. This popularity has been based upon two very solid reasons—the sound pedagogic method of the book and the direct application of the work to actual industrial practice and needs.

The new edition appeals to us as a logical improvement over the original work. It has been amplified by a much needed new chapter on screw threads, bolts and fastenings, a greatly improved and enlarged chapter on working drawings, a new chapter on structural drawing, an extended chapter on architectural drawing, and an appendix of useful tables. The most satisfactory additions to the work are the increased number of practical problems and numerous new drawings adapted from the industries.

Like the original book, the present work appeals most because of the correct pedagogical basis on which the author predicated the teaching of drawing. He likens it to language study and insists that the student first grasp its orthography—shall get a vocabulary—and then acquire a grasp of its grammar and its rhetoric. With this foundation drawing is to be a powerful aid to thinking in three dimensions, to rapid and actual visualization and an accurate means of expressing mechanical and engineering thought on paper. Drawing as taught with these objects in mind is one of the most essential—if not the most important—study for the engineer and mechanical designer. The author has anticipated the use of the book in short as well as long courses and has arranged each topic so that omissions may readily be made without destroying the continuity of a well rounded brief study. He has at the same time included much technical information that is of reference value so that the book is valuable as a permanent source of reference in the engineer's library.

## NEW PAMPHLETS AND REPORTS.

*A War Catechism. Questions and Answers Concerning the Great World War (revised).* W. W. Earnest, superintendent of schools, Champaign, Ill. This pamphlet represents a revised edition of a former treatise on the main facts of the great world war. It discusses the events leading up to the first clash of arms, preparation of the belligerents for war, countries engaged and method by which they entered, scientific inventions devoted to war purposes, the entry of the United States and her part in the war, the problems which have been met and solved, agencies of usefulness in the war, and peace guarantees.

*Federal Aid for Vocational Home Economics in Texas, Under the Smith-Hughes Law.* Bulletin 75, 1918. By W. F. Doughty and Nina B. Crigler. Published by the Department of Education, Austin, Tex. This bulletin has been prepared to indicate the conditions governing federal aid for vocational home economics in Texas, to explain the method of applying such aid, and to give such extracts from the vocational law as affect the subject. It outlines the general conditions, the kinds of schools which may receive federal aid, courses of study, and method of applying for federal aid for vocational home economics.

*Federal Aid for Vocational Industrial Education in Texas.* Bulletin 76, 1918. By W. F. Doughty and N. S. Hunsdon. Published by the Department of Education, Austin, Tex. The bulletin outlines the conditions governing federal aid for industrial education. It discusses the general conditions, the expenditure of funds, courses of study, methods of instruction, qualifications of teachers and kinds of schools which may be organized for instruction purposes.

*Federal Aid for Vocational Agriculture in Texas.* Bulletin 68, 1918. By W. F. Doughty and J. D. Blackwell. Published by the Department of Education, Austin, Tex. This bulletin is similar to the other pamphlets and is applicable to the subject of agriculture.

*Standard Broom Corn.* Benton E. Rothgeb. Farmers' Bulletin 958, U. S. Department of Agriculture. Broom corn is grown for the brush, which is used for the manufacture of brooms and brushes. This pamphlet discusses the history of broom corn, climatic conditions, growing the crop, seed, cultivation, harvesting, curing and preparation for marketing.

*Recipes and Menus.* Prepared by the Manual Arts and Home Economics Department of the Santa Barbara State Normal School, Santa Barbara, Cal.

This 36-page booklet offers a variety of wheatless and meatless menus and recipes and meat substitutes that will help solve the problem of conservation. The booklet will be of help to teachers and pupils in preparing a well-balanced diet.

*Agricultural Preparedness and Food Conservation.* A study in thrift. Prepared by the Committee on Thrift Education, National Council of Education. Today there is spreading throughout the nation an understanding of the necessity for the practice

of those principles so ably advocated but so little acted upon in the past. The present pamphlet discusses the problem of increased food production thru the help of the schools, waste of food from producer to household, thrift in the home, adaptation of courses in domestic economy and industrial arts to meet existing demands, food storage and preservation, the food problem, the war and the schools.

*Medicine, Chiropody, Veterinary Medicine and Surgery, Public Accountancy, and Shorthand Reporting.* Law, rules and information relating to these branches of higher education as controlled by the Education Department of the State of New York. The booklets give valuable information on qualifications, expenses, licenses, registrations, examinations, courses and admission to practice.

*Night Schools and Night Classes in Trade and Industry.* K. G. Smith, Iowa State College of Agriculture, Ames, Ia. Bulletin 33, Engineering Extension Department, Iowa State College of Agriculture. The bulletin has been prepared as a result of the author's ten years of experience in organizing and teaching evening and day industrial classes and treats especially of the vocational classes in trade and industry. Among the subjects covered are arithmetic for builders and machinists, gas engine construction, automobile construction, electricity, sheetmetal

work, heating and ventilation, and janitor-engineers' course for school and public buildings.

*The Seasoning of Wood.* By Harold Betts. Bulletin 552, U. S. Department of Agriculture. Price, 10 cents. Supt. of Documents, Washington, D. C.

*Emergency War Training for Oxy-Acetylene Welders.* Bulletin No. 11, 1918. Published by the Federal Board for Vocational Education, Washington, D. C. This bulletin is the seventh in the series prepared for men in the government service. The course is intended to offer opportunity for learning a trade and at the same time enables the man to serve his country by doing a special job well. The pamphlet discusses the historical development of the oxy-acetylene process and its application to the war. A suggestive course of study is given in detail for the benefit of teachers and directors who are superintending the instruction of workers.

*A Question of the Future Work and Education of the State Trade Education Shop at South Manchester, Conn.* 1918-19. The State Trade Education Shop is one of several institutions maintained by the state of Connecticut with the co-operation of the district school systems. The school is free to boys and girls of the state who have reached the age of 14 and offers six trade courses.

## NOW, ARE THERE

## ANY QUESTIONS?

*This department is intended for the convenience of subscribers who may have problems which trouble them. The editors will reply to questions, which they feel they can answer, and to other questions they will obtain replies from persons who are competent to answer. Letters must invariably be signed with full name of inquirer. All questions are numbered in the order of their receipt. If an answer is desired by mail, a stamped envelope should be enclosed. The privilege of printing any question and reply is reserved. Address, Industrial-Arts Magazine, Milwaukee, Wis.*

### Loom Construction.

861. Q.—In the August Magazine appears a picture of a carpet loom. I should like to build one in our shop. Can you furnish me with a description of one that can be made in a school shop?—I. D.

A.—Full drawings for both Danish and Swedish looms appear in Worst's "Problems in Woodworking." The Swedish loom is especially suited for rug weaving.

A complete set of drawings for a modified form of Swedish loom made in the Joliet schools appeared in the *Industrial-Arts Magazine* for January, 1916, pages 35-37.

### Help in Toymaking.

863. Q.—We expect to make toys for a Christmas sale. Can you recommend some books that I can consult?

A.—A list was printed in the Magazine for December, 1917. A part of that list is here repeated with a few additions that seem timely:

### Books on Toymaking.

*Blackburn's Boy Activity Projects*, Manual Arts Press, Peoria, Ill.; *Williams' How to Make Things*, \$1.20, Munn & Co., New York; *Johnson's Toys and Toymaking*, \$1, Munn & Co., New York; *Perry's Spinning Tops*, \$1, Munn & Co., New York; *Red Cross Manual*, Red Cross, Junior Division, Washington, D. C.; *Beard's Mother Nature's Toy Shop*, \$1, Charles Scribner's Sons, New York; *Foster & Woodhull's Things Boys Like to Make*, \$2.50, Uplift Publishing Co., Philadelphia, Pa.; *Hall's Home Made Toys for Boys and Girls*, \$1.25, Lothrop, Lee & Shepard, Boston; *Toymaking*, \$0.50, Funk & Wagnalls, New York; *Marten's Manual Training—Play Problems for Boys and Girls*, \$1.25, Macmillan Co., New York; *Lukin's Toymaking for Amateurs*, L. Upcott, Gill, Bazaar Office, London, Eng.; *Moore's Manual Training Toys for the Boy's Workshop*, \$1, Manual Arts Press, Peoria, Ill.; *Sage's Toy Animals I Can Make*, \$0.35, Platt & Neck, New York; *Booth's Toys and Things*, \$1, Geo. H. Doran, New York; *Polkinghorne's Toymaking in School and Home*, \$2, Hubbell-Leavens Co., New York; *St. John's Real Electric Toy Making for Boys*, \$1, T. M. St. John, New York; *Sloane's Electric Toymaking for Amateurs*, \$1, N. W. Henley Co., New York; *Anderson's How to Make Magic Toys*, \$0.10, Tousey & Co., New York; *Toy Model Book*, \$0.25, E. P. Dutton & Co., New York.

The following suggestions for toymaking have appeared in the *Industrial-Arts Magazine*:

### Games and Toys.

Something to Laugh At, December, 1914, p. 272.

Toy Repair Work in Oklahoma City, Okla., H. F. Rusch, March, 1915, p. 139.

A Bean Bag Board, Arthur Kinkade, October, 1915, p. 175.

Making and Repairing Christmas Toys, Elmer Christy, December, 1915, p. 267.

Toy Dog, P. H. Heron, March, 1916, p. 130.

Inlaid Checker Board Table, Milford G. Fox, April, 1916, p. 175.

Cribbage Board, Geo. H. Wichmann, July, 1916, p. 317.

Doll's Cradle, E. M. Cook, February, 1917, p. 86.

Mechanical Duck, Gerald A. Boate, March, 1917, p. 129.

Old New Game, Frank H. Shepherd, November, 1917, p. 460.

Repairing Christmas Toys, Harry R. L. Chellman, December, 1917, p. 480.

Sled, Wm. P. Taugher, December, 1917, p. 499.

Kiddie Car, LeRoy A. Prescott, January, 1918, p. 35. Checker Board and Container, Douglas Donaldson, January, 1918, p. 39.

Solitaire Board, C. E. Partch, March, 1918, p. 113.

Ring Toss, H. G. Schumacher, July, 1918, p. 276.

War-Time Game, C. S. Goldsmith, July, 1918, p. 280.

Go-Cycle, L. C. Peterson, September, 1918, p. 356.

Toy Making for Santa Claus and Uncle Sam, E. M. Heath, October, 1918, p. 394.

### Miscellaneous.

Christmas Sale, R. F. Windoes, December, 1914, p. 266.

Gift Boxes, Nancy Beyer, December, 1914, p. 259.

Jewelry Designs for Christmas Gifts, H. R. Sorensen, December, 1914, p. 245.

Christmas Problems in the First Four Grades, M. F. Gleason, December, 1914, p. 241.

Taboret, L. D. Perry, December, 1917, p. 505.

Modeled Leather Work, L. G. Martin, December, 1917, p. 493.

High School Christmas Problem, Beatrice Cannon, December, 1917, p. 481.

Furniture Problems, Clark Woodward, February, 1918, p. 73.

Turning Problems, Glenn Lukens, February, 1918, p. 76.

Some High School Problems in Modeled Leather, L. G. Martin, March, 1918, p. 107.

Sewing Cabinet, H. C. Givens, March, 1918, p. 115.

Arm Rocker, E. L. Usry, August, 1918, p. 321.

Umbrella Stand, L. D. Perry, September, 1918, p. 355.

Ladies Writing Table, H. R. Porter, September, 1918, p. 359.

Telephone Stand and Stool, E. M. Sandvig, October, 1918, p. 297.

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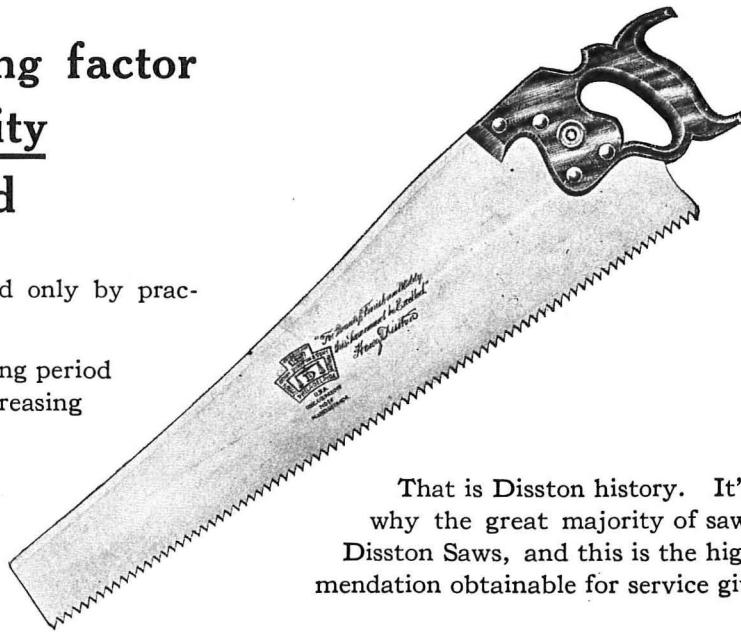
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## HOME ACCOUNTING.

The senior high school girls of Peoria, Ill., during the past year, prepared essays on "Home Accounting" in connection with the course in home administration which they had undertaken a few months previous. The essays, which were written under the direction of Miss Minnie M. Peterson, Supervisor of Home Economics, set a high standard and indicate an effectiveness which is most commendable. For the benefit of the readers of the *Magazine*, we reproduce, herewith, one of the papers which is of special timeliness and interest at this time.

## How the Budget is a Help to Conservation.

How the Budget is a Help to Conservation.

Save! Save! Save! This is the cry of our country in the time of this great crisis. Why not learn how? One of the first great helps is the making of a budget of income and expenditures for a given period of time intended to determine expenditures for that time. There are two methods of doing this and a combination of the two is the most desirable. The theoretical budget is the dividing of the income into the main classes of shelter, clothing, food, operating expenses and higher life, while the practical budget is kept by listing every cent spent during the week, month or year.

The high cost of living is generally the cost of high living or too little thinking, but the housewife of today is beginning to realize the importance of budget making as an aid to intelligent buying. Think of looking over your lists and seeing where you have spent too much, and where not enough and profiting by this knowledge in future.

More than half of our families are living on less than \$800 a year. Recent investigations show that a man requires \$0.40 daily for food. Add to this a wife and several children. Statistics show that a woman requires eight-tenths of a unit of food; a boy 15 years, nine-tenths of a unit; children 8 to 10 years, 75 hundredths of a unit; children 4 to 6 years, 15 hundredths of a unit; and what is the result? If the mother is not intelligent as to how to spend and keep accounts of her expenditures it means a poorly nourished family and a weak generation. If the mother knows how to make a budget, keeping strict account of her expenditures, she finds she can feed and clothe her family properly, altho there may not be as much as desired to spend for higher life.

The responsibility of the family budget should not fall upon the wife and mother alone, but should be shared by every other member of the household. Even the young boy and girl

should be taught the value of money. Small accounts should be trusted to their care at a very early age and personal accounts kept showing what use has been made of it.

Women of today would be better spenders if they had been wisely directed and instructed in the use of money, in their earlier years. An allowance is an excellent thing for high school boys and girls but before this can be granted, it is quite necessary that the parents know what it should cost to support boys and girls of these years. It is wise to plan an allowance in such a way that the boy or girl is expected to save a portion. If an incentive is added for saving such as, for further education, for the purchase of some much desired article, it will be found easier to accomplish the thrift habit.

It is well for a woman to learn which foods give the most food value for the amount of money paid out. In this way a dollar is saved which would be spent on foods that are not nourishing.

Why not try to get along without a maid this year? What a reduction you will notice in your column of operating expense, and it only takes a little more work and a little more planning.

Authorities such as Ellen Richards, Dr. Engel, and Straight-off give us the following data for expenditures: Food, 25 per cent; shelter, 20 per cent; clothing, 15 to 18 per cent; operating expenses, 15 per cent; savings and higher life, 20 per cent; incidentals, 5 per cent.

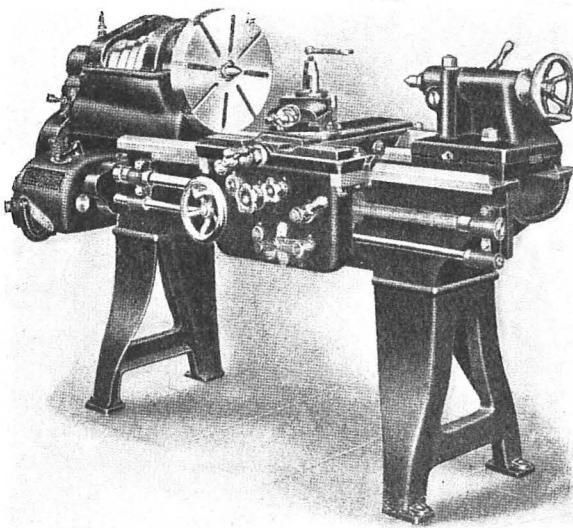
Doesn't this seem a simple and economical way to spend the income?

There are only a few points that women should need to observe in spending. They are conscience, will power, intelligence and common sense. With these she can accomplish wonders, which will seem to those who haven't tried, a miracle.

Clothing can also be conserved. If good materials are bought and good care is taken of them, they can be made over and appear as new garments. A housewife can learn to sew and make the clothing for the family, thus cutting down the expense. By heeding these suggestions, we housewives can help fight a winning war.—*Harriet Goller.*

Louisiana has been given \$39,085 and Mississippi \$42,388 under the provisions of the Smith-Hughes law for vocational education during the next year. The money will be used for teaching home economics, trades and industries and agriculture.

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## NEWS NOTES FROM THE FIELD.

*Grand Rapids, Mich.* Under the supervision of Mr. L. R. Abbott, director of industrial education, an industrial school for boys has been opened. The school offers instruction in wood-work and in metal work, and the boys spend one-half of their time in the shops and one-half in the academic classroom. The course of study has been arranged so that the academic work is very closely related to the shop activities.

*Omaha, Neb.* More than two hundred boys have enrolled for the vocational classes conducted in the High School of Commerce annex. The course includes automobile mechanics, carpentry and printing.

*The new commercial school* established last year in the McClurg Building, Chicago, seems destined to become the nucleus of a large central commercial high school. Originally intended as a part-time school for employed boys, the school has been besieged with applicants so that classes are now open to all persons without a high school education.

During the last three months several hundred students have enrolled for special courses in clerical training, adding machine and comptometer operating, typewriting and stenography. Part of the increased attendance is due to war-time conditions making it necessary for women to take commercial training.

*Norristown, Pa.* The high school opened in September with a new manual training department fully equipped for work. The cost of the equipment is estimated at \$1,000.

*Mr. Leon H. Beach*, director of industrial education for Vermont, is working with the board of education at Montpelier in the preparation of courses and the formulation of policies governing part-time training in industrial education. It is planned that the boys shall work one-half of the time in the shops and give the remaining time to study in the classroom under expert teachers. The boys are to study subjects pertaining to the particular trade selected and are to receive a stipulated hourly wage while learning. Students who have completed the ninth grade and who are physically fit, are eligible for the course.

*The vocational school* at Lowell, Mass., has opened with trade courses for boys and girls. The boys are offered instruction in various trades while the girls are given training in food conservation and dressmaking.

*Terre Haute, Ind.* Telegraphy and sheetmetal work have been added to the course of study at the Boys' Vocational School. It has been found that the demand for trade trained boys exceeds the supply available.

*Mr. A. P. Fletcher*, director of vocational education at Cleveland, has announced that girls in domestic science classes are to receive credit for cooking done in their homes. Mr. Fletcher points out that girls who take this course must put their training in school to a practical test and that they should receive recognition for work done at home.

*Fort Wayne, Ind.* The vocational classes formerly conducted in various schools and shops have been centralized in the old high school building with expert instructors for each course. The school offers full commercial courses for local, state and government service, home economics work for girls and women, and trade courses for boys and students between 14 and 25.

*The Apprentice Continuation School* of Cincinnati has been opened this year to workers in all trades. The school formerly limited its classes to workers in machine shops and pattern makers. The change in regulations is intended to meet the demand for skilled workers in war industries.

*The vocational department* of the high school at Okmulgee, Okla., has been extended in scope and value thru the addition of two instructors and complete courses in forging, foundry work and metal work. Mr. Bernard B. Burg, formerly at Des Moines, Ia., is in direct charge of the vocational department. Mr. Burg is assisted by H. R. Ward, also a vocational expert.

*The school board* at Omaha, Neb., has taken steps for the erection of a vocational shop building in connection with the High School of Commerce. A large number of students have expressed their preference for certain vocational courses which are much in demand at the present time.

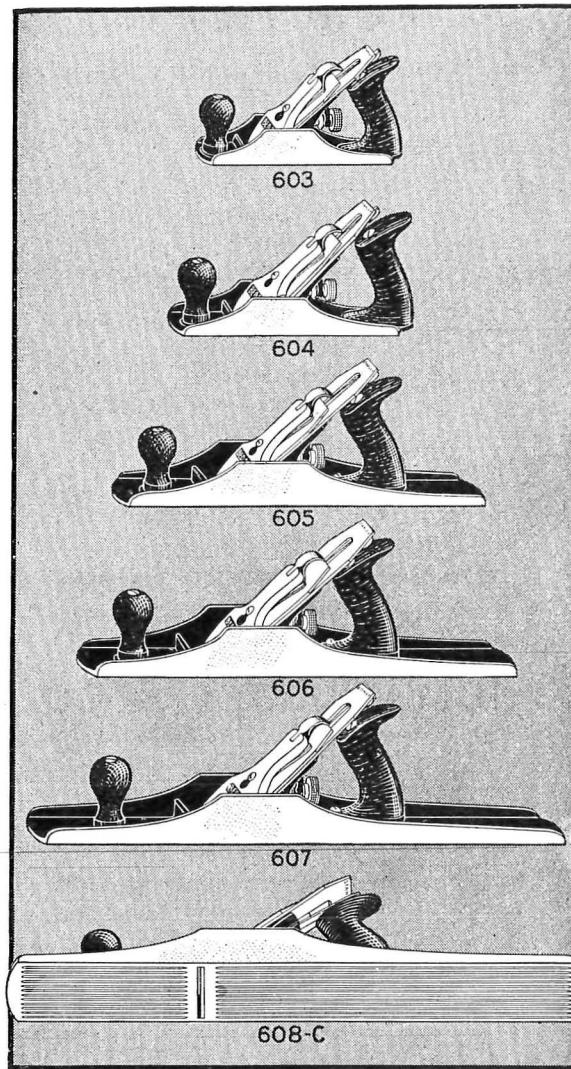
*The vocational evening school* opened at Eau Claire, Wis., with courses in china painting, cooking, sewing, French, business English, telegraph and radio work.

*Stockton, Cal.* A machine shop has been opened in connection with the evening schools. The shop is equipped for both automobile and machine shop work. Correlation between shop work and subjects having a trade value is closely maintained.

*The school board* at Gettysburg, Pa., has remodeled a residence for the use of the Domestic Arts Department. The new department is to be devoted to the teaching of housekeeping, sanitation and nursing.

(Continued on Page XXV)

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*(Continued from Page XXIII)*

*Senator Hoke Smith* of Georgia has introduced a bill in Congress providing for vocational education of persons disabled in industry. The bill provides that beginning June, 1920, there shall be set aside the sum of \$1,000,000 for the work, to be distributed on the basis of population, \$500,000 to be used for the fiscal year ending June, 1919, and \$750,000 the following year. Each state is required to duplicate the amount of the federal aid.

*Co-operative part-time training* has been introduced at Decatur, Ill., for the benefit of students who are compelled to leave school to enter some form of industry. Three shops have been designated as centers for the shop training of these students.

*Elyria, O.* Grade manual training boys have made a number of packing boxes for the use of the Red Cross.

*The Extension Division* of Columbia University is offering courses in ship drafting as preparation for men about to take the civil service examinations for ship draftsmen. The courses are in three divisions, one for those unfamiliar with instruments and methods, one for assistant draftsmen and an advanced course for candidates for the United States Civil Service Examination for ship draftsmen. Each of the courses covers twelve weeks and is open to men and women. The instructors are Thomas H. Harrington, professor of mechanical drafting, Arthur Bolton, chief hull draftsman, Federal Shipbuilding Company, and Richard F. Bach, curator of school architecture.

*The Art Institute of Chicago* has reorganized its school to make it possible to more fully meet the future demands in the way of trained artists. The reorganized school recognizes its responsibility to American industry and aims to meet the demands of the student whose vocation must give him a livelihood.

The school has three divisions, the lower, the middle and the upper departments. The first is intended for high school students and provides a course in drawing and design, including color. The second division is an extension of the first and specializes in design, normal art, commercial art, illustration and crafts, painting and sculpture.

The upper school is devoted to advanced students who are pursuing courses in painting and sculpture and who later may study under the recognized masters.

*The Rhode Island School of Design* at Providence is offering five vocational courses as a means of meeting the present emergency in industrial lines. The courses include blueprint reading, machine shop practice, loom fixing, together with a special class in machine shop work for the training of women and special groups of men for industrial lines.

*Denver, Colo.* An evening vocational school has been opened in the manual training high school for the benefit of those ambitious for advancement and those without a complete education. In addition to academic high school studies of college preparatory character, there will be offered courses in trades and industries covering forty subjects in all.

*St. Paul, Minn.* A department of vocational guidance has been opened with Miss Gertrude Smith in charge. The department aims for the present to adapt school work to meet the individual needs of the pupils and to help pupils in choosing courses that will be the basis for the occupations they will follow after leaving school. Another duty of the department will be the arrangement of school work for employed pupils so that the hours of employment will not interfere with class schedules.

*About 25 per cent* of the high school students at Biddeford, Me., are carrying on various forms of employment in connection with their high school work. To meet the needs of these students it has been decided to limit the school sessions to a half day, sessions beginning at 7:45 and closing at 12:05 in the afternoon.

*A vocational teacher-training course* has been opened at the Buffalo Normal School. The course is open to expert tradesmen who are desirous of becoming teachers in some branch of industry.

*Vocational education* has been introduced at Birmingham, Ala., in three special forms. The first are the vocational day classes for boys who have selected a specific trade. Boys in these classes are permitted to elect those studies which go with the trade selected.

The second are the part-time schools for boys employed in various industries. Classes have been opened in the shops where academic studies and shopwork are closely correlated for the benefit of the students.

The third is the combination school providing for evening instruction in the trades of carpentry, blacksmithing, molding, mechanics and machine shop practice.

*The action* of the Indianapolis board of education in discontinuing classes in home economics and manual training has been the subject of an inquiry by the Indiana State Council of

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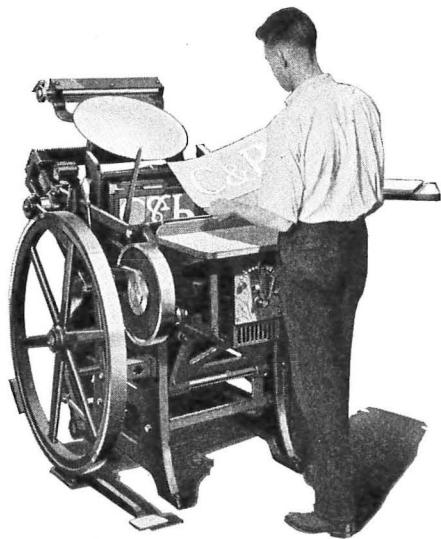
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Defense. Charges against the board were brought by Frank Duffy, prominent labor leader and advocate of vocational education, that the board is hindering the federal program for vocational education so far as Indianapolis is concerned. Mr. Duffy alleges that the board failed to co-operate in establishing vocational classes for conscripted men and that it discharged teachers of vocational subjects. The members of the board refused to attend a hearing of the educational committee of the Council of Defense and the matter has been referred to a special committee.

*Chicago, Ill.* A school for jewelry apprentices has been opened in the Harrison Technical High School. The school is conducted under the direction of James H. Winn, a practical manufacturing jeweler.

The school board of Dallas, Tex., has added the subjects of war history, military training, mechanics, radio and buzzer work to the high school courses. In the colored schools, domestic science, manual training, laundering and shoe repairing are to be emphasized.

*Boston, Mass.* A course in agriculture, giving special attention to the training of gardeners and superintendents of estates, has been introduced at the West Roxbury High School. The course will combine academic subjects with the theory of agriculture, and practical demonstrations will be given in parks and greenhouses and on farms and estates of the vicinity.

*Dallas, Tex.* A laboratory course in automobile mechanics has been introduced in the high school as a practical war-time subject.

*Muncie, Ind.* Garden clubs are to be continued in the schools this year under the direction of W. F. Rutledge, supervisor of boys' and girls' clubs.

*Boise, Ida.* A course in gas engine and automobile mechanics has been introduced in the high school. Mr. Walter Lindsay is the instructor.

*Sheetmetal* and oxyacetylene welding have been added to the manual training course at Wheeling, W. Va.

Plans are rapidly maturing for the fifth annual convention of the Vocational Education Association of the Middle West which will be held at the Congress Hotel, Chicago, on January

16, 17 and 18, 1919. The splendid programs of previous meetings of this association have built up a membership in the space of four years which includes a wide territory, representing educators from all of the states of the Mississippi Valley and many from a region not included in the term "middle west." Those who have attended one of the conventions become "repeaters," and count this one of the meetings which they can not afford to miss during the year. The program committee has already arranged a tentative program which promises to contribute materially to solution of problems confronting this form of education in war times.

A few copies of the proceedings of the conventions of 1916 and 1917 are still available at 25 cents each and contain valuable reference material to students of vocational education. This publication and information regarding the coming meeting may be had by addressing the secretary, Leonard W. Wahlstrom, 330 Webster Ave., Chicago.

*Wheeling, W. Va.* Manual training and home economics have been extended to include the elementary grades from the fifth upward. Three new centers have been established in grade schools, offering opportunities to a larger number of pupils. These courses are required for all students in the first semester of high school.

A vocational school for boys has been opened at Richmond, Va., to replace the former manual training course in the high school. Boys entering the school are permitted to elect three years' training in one of the following trades: Cabinet making and carpentry, pattern making, machine shop work, electricity and printing. The school complies with the provisions of the Smith-Hughes law.

The vocational night school at Richmond offers in addition to the former courses, practical work in automobile driving and elevator operating for women who may be called upon to take the places of men. Preparation for real service in an emergency is emphasized in all vocational work.

*Paterson, N. J.*, has adopted a complete course in manual training for the school year. It is divided into four divisions as follows: (1) manual training in the grades, (2) manual training in the high school, (3) mechanical drawing in the high school, and (4) correlation in the grades. These are subdivided as follows:

(Concluded on Page XXIX)

# *In Time of War*

# Prepare for Peace

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Despite the demands and conditions occasioned by the war, the printing industry is to-day in a fairly normal condition. Contrast this with the other industries which enter into competition with printing as school manual activities. It requires no great vision or imagination to realize what will be the condition in these particular trades after the war. School printing outfits afford exceptional advantages in education which will be greater after the war.

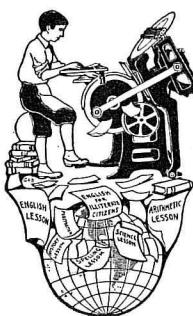
Twelve hundred public schools in the United States alone have in the last seven years installed printing outfits. This surprising fact would not be possible had not printing clearly proven its worth as an educational medium. The most satisfactory feature of this growth lies in the fact that those educational systems which install one

or more outfits almost invariably install additional outfits during the following years. Chicago with its 55 outfits; New York, 31; Cleveland, 17; Springfield, Mass., 11; Indianapolis, 11; Newark, 7; and Cincinnati, 3, are cities whose educational systems justify the above assertion.

The schools are training for the future. "Horse sense" and efficiency demand that the subjects now taught provide prospects for earning a living. Printing is one of the manual activities now being taught in the schools that furnishes such an assurance.

Printing outfits are comparatively low in costs, both initial and maintenance.

May we send you a suggested list of equipment and other information concerning printing as an educational subject?



*Education Department*

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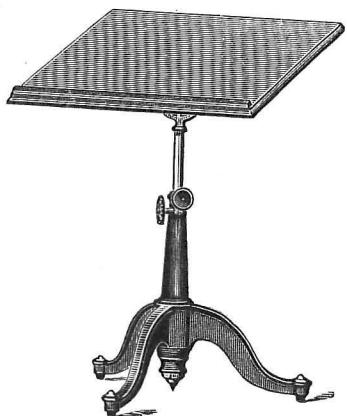
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(Concluded from Page XXVI)

1. *Manual training in the grades.*
  - (a) Introductory course for 45 minutes a week for one term.
  - (b) Intermediate course for 90 minutes a week for four terms—one term printing, one electricity and two of woodwork.
2. *Manual training in the high school.*
  - (a) Shopwork divided into eight terms of work, in joinery, sheetmetal work and plumbing, wood turning, pattern making, moulding and concrete work, forging, milling and building construction, machine shop practice (180 minutes).
  - (b) Industries giving general notions of industrial organization and management (six terms of 45 minutes a week).
  - (c) Shop mathematics for six terms of 45 minutes a week.
3. *Mechanical drawing in the high school.*
  - (a) Mechanical drawing as a science.
  - (b) Mechanical drawing applied.
4. *Correlated work to be given in the grades by classroom teachers.*  
Subjects — arithmetic, geography, spelling, elementary science, history, language and art.

The chairman of the program committee has announced that a strong program has been arranged for the annual meeting of the Manual Training Section of the Northwestern Wisconsin Teachers' Association, at Eau Claire, October 18th. Mr. L. D. Harvey, of Stout Institute, Mr. J. M. Dorrans and Prof. Spriggs, of the River Falls Normal School, will speak on vital topics pertaining to present day and war needs.

#### WAR AND THE SCHOOLS.

*Richmond, Va.* An important addition to the regular work of the schools this year has been the training in mechanics for the War Department. During the past summer two groups of conscripted men completed courses in carpentry, bench wood-working, automobile repair, motorcycle repairing and riding and radio operating. With the formation of the fall classes, work has been begun on the construction of barracks for winter quarters. Mr. H. Clay Houchens is director of training and Mr. W. C. Locker is business manager. The entire educational work is supervised by Supt. J. A. C. Chandler.

A contingent of 232 drafted men were quartered at the Saunders Trade School, Yonkers, N. Y., during the summer vacation. A second contingent of men arrived in the late summer to undertake the fall course of training. During the summer the men had the use of the shops during the entire day, but with the opening of the schools classes for soldiers are restricted to the morning hours.

The children of the Omaha (Neb.) schools during the past year completed 30,000 articles for the Red Cross and for foreign relief. The articles included hospital garments, surgical dressings, refugee garments and knitted articles. Girls in the eighth grade made four hundred shirts. The work was done under the direction of the manual arts department, of which Miss Helen L. Thompson is supervisor.

*Columbia University*, in connection with its extension teaching, has added a course in camouflage or military concealment for the benefit of men and women artists who desire to offer their services to the government. The course will cover twelve weeks and will include the elements of military concealment according to the best practical standards and technical methods at present employed. Classes will take the form of lectures, laboratory and field exercises, and results will be closely observed by notebook and photographic record. The cost of the course is \$24 for the twelve-week period, plus a fee of \$10 for equipment charges.

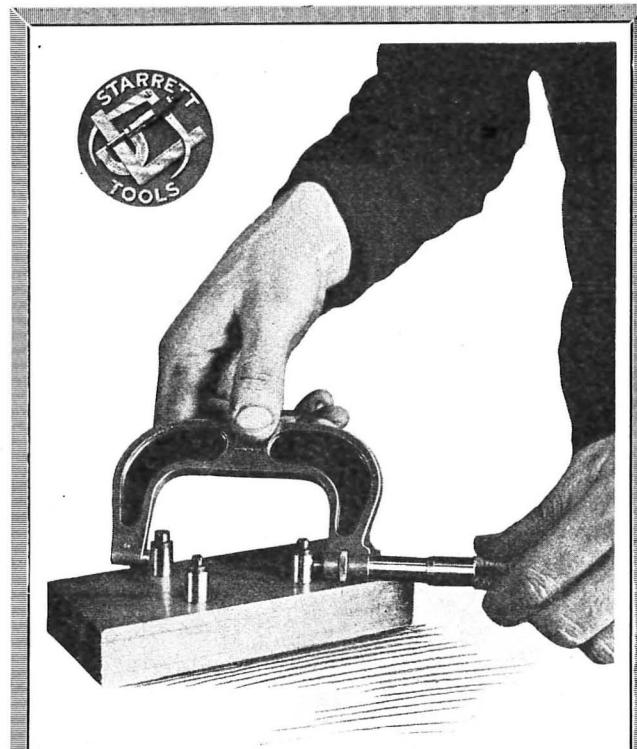
*Richmond, Va.* Radio classes for enlisted men have been added at the vocational evening school.

A class in welding has been opened at the U. S. Welding Plant, Cincinnati, O. The class was formed at the request of the War Department for the benefit of men in the draft ages.

*Chicago, Ill.* The evening schools are offering training courses for non-commissioned officers, technical courses, courses for mechanics, automobile drivers, radio operators, etc. In the radio classes men are given preliminary training in code and buzzer work, preparing them for signal corps work.

*Sewing work* in the schools of Trenton, N. J., is to be modified this year. Each grade has been assigned work suitable to the ages of the children and every room is expected to complete at least one garment for the Red Cross.

Of 47,243 soldiers in United States Army training detachments being given vocational training for overseas service, 17,429 are being taught automobile mechanics, 5,450 automobile driving, 21,137 blacksmithing, 4,506 carpentry, 2,969 electricians, 1,251 gas engine, 1,130 general mechanics, 2,054 machinists, 3,724 radio operation, and 996 sheetmetal work. The other work ranges from wheelwrighting to cobbling and locomotive engineering.



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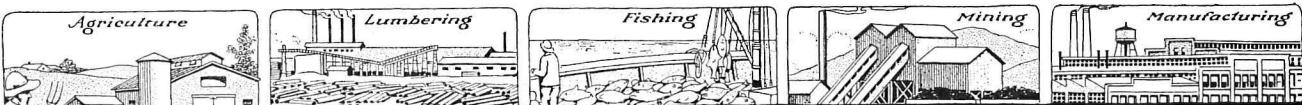
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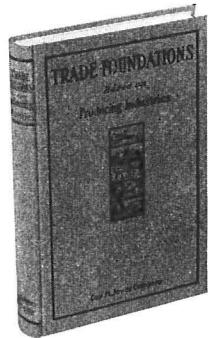
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A number of the students of high schools in Philadelphia will continue to work for the government in the machine shops due to the success of a summer experiment when the pupils made separate parts for all sorts of war machinery, including aeroplanes, motors, locomotives and marine engines. It is estimated the pupils made 23,000 parts of machinery valued at \$4,500. It is planned to reorganize the work to adapt it to the schools in session. Classes are conducted after school hours and on Saturdays.

A base hospital for the reconstruction and re-education of wounded soldiers has been opened at Cape May, N. J. The hospital will have a separate educational building which will offer practically all forms of technical work. The re-education work is in charge of F. O. Edwards, of Springfield, Ill.

The vocational evening school at Richmond, Va., is offering courses in radio work, gas engine construction and higher mathematics for men of military age.

The government has awarded contracts to the manual training departments of city schools for the making in quantities of kitchen chests, folding tables, bread boards, folding beds, drafting boards and splints.

Readjustments in the schools of Minneapolis intended to help meet war needs were discussed at a recent meeting of principals of the grade and high schools. Vocational training for a greater number of pupils, training in war industries for adults and more intensive interest of children in science were among the subjects discussed.

Alameda, Cal. A class in ship drafting has been formed at the evening high school to meet the demand for trained men in shipyards. The former courses in machine shop practice, oxy-acetylene welding and mechanical and architectural drawing have been continued on a broader scale.

A practical course in pattern making has been added to the day course of the high school. The class period covers two hours and is in charge of Mr. Richard Phelps, head of the manual training department.

Beloit, Wis. Classes in motor truck driving, wireless and machine shop practice have been formed for the benefit of men of military age.

The Boston Trade School is offering industrial training to women and girls over 16 years of age in order that they may

qualify for men's positions. The school will offer its facilities during the period of the war for the training of men and women alike.

The Prince School of Education for Store Service has opened its classes in its new location at 29 Temple Place (Boston). The school has been made a graduate department of Simmons College and occupies an important place in war-time because of the opportunities for training offered to women in executive store positions.

### HONOR ROLL.

The following teachers at Denver, Colo., have entered the government service: Charles P. Adams, Jr., Omer L. Brainard, John G. Cook, Frank W. Hansen, Lewis S. Herrmann, Ralph S. Hobson, Edward E. Odom, H. D. Kendig, Paul R. Peak, John H. Price, William S. Rathbun, C. H. Steele, G. S. Voorhees and Howard D. Wise.

Kansas City, Mo., reports the following men in service: Capt. S. M. Ransopher, Mrs. W. N. Reeds, George B. Berkley, U. S. Navy; Clyde A. Brinkerhoff, U. S. Army; Benj. B. Dawson, Scouts; W. L. Eastwood, U. S. Army; Ralph E. Denham, Aviation; George Harris, U. S. Army; Emory Kiefer, U. S. Army; Sidney J. Lasley, U. S. Army; Wm. H. McCubbin, Jr., U. S. Navy; C. A. Larson, War Work; Ernest L. Moore, U. S. Army; Wm. G. Moore, Y. M. C. A.; Rupert C. Ott, U. S. Army; Marshall Penn, U. S. Army; I. E. Reeves, U. S. Army; Thomas A. Stratton, Aero Signal Corps; Wiley Williamson, War Work; H. V. Campbell, War Work; C. C. Hornaday, U. S. Army; Lewis Nofsinger, Aviation Training School; Lee Schneitter, War Training School; Maj. E. M. Banister, Civilian Personnel, Washington, D. C.; Arthur M. Swanson, Ordnance Dept., St. Louis, Mo.

Oklahoma City, Okla., reports the following men in government service: J. B. Morrison, aviation, Honolulu; Lowden Carle, Depot Brigade, Camp Travis, Tex.; Paul V. Selders.

The following men in New Haven, Conn., are in service of the government: Edward A. Krause, shipbuilding, New Jersey; Lewis Hall, aviation; Harry B. Snowman, munitions.

Buffalo, N. Y., has the following men in service: Robert S. Hoole, Gerald Skinner, James E. Farrell, Charles Hattenberger, William J. Regan, Alfred H. Bingham, Harold H. Hoeffer, Robert H. Weist, Arthur J. McDonnell, Martin H. Doeberl, Edwin E. Healy, Ray H. White, Allan H. Nicol, and Edmund Wuenst.

Manual training and vocational teachers who have entered the government service are: R. W. Siler, Harry L. King, J. O. Barnwell, Theodore L. Johnson, Alvin G. Hansen, Fabian M. Kannenstine, and G. H. Hargitt.

Richmond, Va., reports the following teachers in service: William F. Metcalfe, C. E. Earle, Benjamin Rockland, and H. Kendall King.

The following teachers from Nashville, Tenn., are in government service: John J. Tigert, Glenn Gentry, M. D. Doyle, and Stevan R. Young.

Jersey City, N. J., has the following manual training teachers in service: James A. Williamson, Ordnance Dept., Camp Hancock, Ga.; H. K. Baumritter, Rehabilitation Dept., Walter Reed Hospital, Washington, D. C.; Joseph Fishkin, Training Camp, Brunswick, Ga.; Ray E. Ellis, shipbuilding.

Yonkers, N. Y., has the following teachers in service: Thomas Svack, National Army; Frank B. Delvin, U. S. Navy, and Harry Langer, U. S. Navy.

Wilbur L. Tyrrell, of the Technical High School, Scranton, Pa., is with the Fifth Training Regiment, Camp Humphrey, Acotink, Va.

The following men from Cleveland, Ohio, have entered the emergency fleet service: A. F. Nienhauser, Charles W. Hanes, and Ralph W. Fellows.

Rochester, N. Y., has the following teachers in service: Everett H. Kennell, Walter H. Carlisle, Edwin A. Roberts, Arthur A. Fagan, Howard Bennett, Albert H. Clair, John L. Leonard, Raymond McDonald, and Glenn Rockcastle.

Elmer H. Krehbiel, Washington, D. C., National Army.

The following teachers of Spokane, Wash., have entered military service:

Charles R. Carpenter, Supervisor of Construction; Harold Haas, Frank W. Higgins, Ralph Yeoman, and Ross E. Badwell.

R. O. Bagby, Omaha, Neb., U. S. Medical Corps.

Miss Bertha Elsasser, Omaha, Neb., Nurses' Corps, Ft. Riley Base Hospital.

The following teachers from the schools of San Antonio, Tex., have entered government service: R. V. Rust, R. G. Taylor, R. L. Leissner, W. E. Montgomery, R. M. Russell, and R. T. Harris.

The members of the manual training department at Indianapolis, Ind., who have entered the service are: W. C. Geyer, C. W. Hyde, R. M. Kettering, D. B. Lutz, R. W. Miller, E. J. Whelan, Charles W. Youngman, and S. S. Orman.

The following manual training men of Boston, Mass., are in government service: Francis L. Bain, Captain, Engineers' Corps, Camp Humphrey, Va.; Norman P. Barker, Bugler, 103rd Regiment, France; George E. Parsons, Captain, 101st Engineers, France; Frank P. Kelley, Coast Artillery; George Adamson, Ensign, Aviation Corps, Long Island, N. Y.; Francis J. Emery, Ensign, U. S. Navy Machine Gun Classes, Massachusetts Institute of Technology; John L. Murphy, Ensign, Naval Aviation, Pensacola, Fla.; William E. O'Connor, U. S. Naval Gas Engine School, Columbia University, N. Y.; William L. Young, Warrant Carpenter, Hingham Naval Station, Mass.; Edward W. Malone, U. S. Navy, Chatham, Mass.; John C. Brodhead, Quartermaster's Department, Camp Johnston, Jacksonville, Fla.; Bertram I. Affleck, Edward D. Dee and George M. Morris, Shipping Board; John A. Lane and Alden T. Stubbs, Trade School, Charlestown Navy Yard.

Philadelphia, Pa., has the following teachers in service: George R. Thomas, Edwin Bronson, Morton E. Carlisle, Ronald S. Claypoole, Walter Cole, George Cornelius, Roy Dungan, Robert J. Kelly, Jacob Knauf, William McKeown, Joseph B. Maull and Joseph Portner.

The following teachers from Hoboken, N. J., have entered the service: Ernest Arnold, army; John Griffin, army; W. Beckhorn, navy; A. Stover, navy.

Birmingham, Ala., has the following teachers in service: Theodore Wright, Coast Artillery, Fort Barranac, Pensacola, Fla.; R. E. Peters, U. S. Marines, First Replacement Battalion, A. E. F.; John R. Lester, Headquarters Company, 51st Infantry, A. E. F.; George D. Cox, Airplane Service, Pensacola, Fla.

Carl Boehringer, Akron, O., National Army.

Walter Schlagenhaufer, Akron, O., National Army.

J. Edward Hiller, Akron, O., National Army.

F. V. Graves, Akron, O., National Army.

Jesse Tomlinson, Toledo, O., in France.

Lewis Sternier, Toledo, O., in France.

Halfred Coehrun, Toledo, O., 484th Aeroplane Squad, in France.

Paterson, N. J., has reported the following teachers in the government service: Earl Hampton, U. S. Navy Wireless Operator; Alex. Doy, U. S. Army Air Service; John Baume, U. S. National Army.

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## PERSONAL NEWS NOTES.

*Mr. Raymond C. Keopple* has been appointed Supervisor of Vocational Education at Rochester, N. Y., to succeed Mr. Alfred P. Fletcher, who has gone to Cleveland.

*Mr. J. O. Steendahl* of Stout Institute, Menomonie, Wis., has been appointed Director of Vocational Education at Birmingham, Ala.

*Mr. Richard Ernesti* has resigned as head of the Department of Industrial and Fine Arts, Pennsylvania State College.

*Mr. Albert G. Bauersfeld* has been appointed Supervisor of Manual Training in the high schools of Chicago, Ill.

*Mr. Charles C. Dunn*, of the Manual Training Department at Washington, D. C., has been given a leave of absence to engage in war work.

*Mr. J. A. Chamberlain*, Supervisor of the Manual Training Department of Washington, D. C., is supervisor of boys' work for the Potomac Division of the Junior Red Cross, which is under the general supervision of Mr. J. N. Rule, of Pittsburgh. The boys' work division is preparing to undertake the production of a number of articles for the use of the medical corps of the army.

*Mr. L. C. Peterson*, head of the Manual Arts Department of the Southern Illinois State Normal School, spent his summer vacation in war work as mechanic.

*Mr. James P. Munroe*, a Boston manufacturer, has been re-appointed by President Wilson as a member of the Federal Board of Vocational Education. Mr. Munroe is president of the board.

*Mrs. Fred Renkert* has been appointed instructor in domestic science at New Philadelphia, O.

*Mr. K. J. Bacek* has been appointed instructor in manual training at Algoma, Wis.

*Miss Ariel Lemmon* has been appointed instructor in manual training at Flint, Mich.

*Miss Bella Morrison*, instructor in manual training at Lansing, Mich., has accepted a position at the Michigan Normal School.

*Joseph Booker* has been appointed instructor in manual training at Fort Smith, Ark.

*Lieut. F. F. Latshaw*, formerly manual training teacher in the schools of Allegan, Mich., was married early in September to Miss Margaret Cole, also a former teacher. Lieut. Latshaw and bride have gone to Camp Jackson, South Carolina, where the former is connected with the field artillery.

*Miss Elizabeth Lee*, of Coshocton, O., has been appointed head of the Domestic Science Department at Bellevue.

*L. A. Watson* has been appointed instructor in manual training at Martins Ferry, O.

*Mr. J. E. Strebig* has been appointed head of the industrial department of the high school at Farrel, Pa. A four-year industrial course has been introduced leading to the trades of machinist, pattern maker, electrician, and automobile mechanic.

*Arthur H. Bernhardt* has been appointed instructor in manual training at Paterson, N. J.

*The Grand Rapids*, (Mich.) board of education has been requested by the War Department to release Principal Jesse B. Davis for vocational guidance work in connection with the government's war activities. It is the purpose of the War Department that Mr. Davis shall give fifty per cent of his time to the government.

*Mr. A. F. Payne*, director of vocational education at Johnstown, Pa., has been given a two-months' leave of absence to devote his entire time to the ordnance department in Philadelphia. Mr. Payne will have charge of the training courses in factories and mills where employees are trained for more efficient work and greater production.

*Mrs. Charlotte Sadler*, of La Grange, Ky., has been appointed instructor in domestic science at Georgetown.

*Mr. H. M. Appleman*, vocational director at South Bend, Ind., has been appointed assistant to J. G. Collicott, state vocational director. Mr. Appleman will have charge of the night schools for conscripted men.

*Allen Ohmart*, of North Manchester, Ind., has been appointed instructor in manual training at Warsaw.

*Mr. John C. Brodhead*, director of manual training in the Boston schools, has been elected assistant superintendent of schools, to fill the place made vacant by the election of Frank V. Thompson as city superintendent. Mr. Brodhead has been in the military service since the outbreak of the war and has been stationed at Camp Meade as director of vocational training. He has been permitted to resign his commission as major to accept his new office.

*Mr. George Braley* has taken charge of the manual training department at Horton, Kans.

*John Doetsch*, head of the Manual Training Department at Painesdale, Mich., has been drafted into the national army.

*Mr. J. W. Moyer*, of Sandusky, O., has been appointed instructor in mechanical drawing at the Case School of Applied Science.

*Mr. J. W. Milne*, of Sault Ste. Marie, Ont., has been appointed instructor in manual training at Windsor.

*Roy Gibson*, of Kokomo, Ind., has been appointed head of the Manual Training Department at Logansport, Ind.

*C. A. Noyes*, of Orono, Me., has accepted a position at Bangor, Me.

*Charles E. Dawson* has become head of the machine shop department of the Holyoke Vocational School, Holyoke, Mass. *Samuel McAuley* has been placed in charge of the pattern making department, *Richard V. Barry* of the printing department, and *John A. Carty*, assistant instructor in the machine shop department.

*J. D. Huff*, of Albuquerque, N. Mex., has been appointed head of the U. S. Indian Industrial School at Santa Fe. *Mr. Huff* has had several years of experience as a teacher of Indians and Filipinos. Before coming to New Mexico, he served as assistant superintendent at Carlyle. He served twelve years in the Philippines where he rose to the position of second assistant director in the Philippine Bureau of Education. For the past two years he had been day school inspector of Pueblo jurisdiction at Albuquerque.

*Miss Lora M. Warner*, formerly in charge of the drawing and manual training departments, Haverford Township School District, Oakmont, Pa., has accepted a position in Wilmington, Del.

*Mr. J. C. Hambleton* has been elected director of the Columbus Trade School, Columbus, O., to succeed *E. L. Heusch*.

*Frank Layenburg*, of Dunkirk, N. Y., has been appointed head of the manual training department at Auburn, N. Y.

*Miss Elsie Lyons*, of Minersville, Pa., has been appointed instructor in domestic science, Mt. Carmel, Pa.

*Miss Winona Cruise* and *Miss Emma S. Weld* have been appointed instructors in household science at Oregon Agricultural College, Corvallis.

*Charles Kirkpatrick* has been appointed director of vocational guidance and attendance at Seattle, Wash. *Mr. Kirkpatrick* was formerly vice-principal of the Broadway High School.

*Mr. Charles Marten*, formerly principal of the Schenectady Industrial School and director of vocational and prevocational education at Homestead, Pa., has become associate professor of industrial education at the Agricultural and Mechanical College, College Station, Tex.

*Miss Etta V. Leighton*, a leader in vocational education in New Jersey, has accepted the position of civic secretary of the National Security League. *Miss Leighton* will devote her time and attention to the promotion of the league's message of militant patriotism in the elementary schools.

*Mr. P. S. Hasty*, director of industrial education at Topeka, Kans., has been given a six-months' leave of absence in order that he may assist the Federal Board in its work for the re-education of disabled soldiers. *Mr. E. J. Buckles* of Leland Stanford (Cal.) University will take *Mr. Hasty's* place.

*The Scammon Lectures* for 1919 at the Art Institute of Chicago will be delivered in the spring by *Dr. James P. Haney*, director of art in the high schools, New York City.

The selection of *Dr. Haney* is a compliment to the teaching fraternity and an indication of the interest which the art institute is eliciting in industrial arts.

The six lectures will be on the general subject of "Art for Use" and will be presented in a direct and personal way, with the aid of a stereopticon and drawings. The six lectures will be subsequently published in book form by the institute.

The Scammon foundation is perhaps the most noted art lecture foundation in the country. It was founded by *Mrs. Maria Sheldon Scammon* and since its establishment in 1903 has had as speakers the foremost painters, sculptors and architects of America, including *John LaFarge*, *Edwin H. Blashfield*, *John W. Alexander*, *Lorado Taft* and *Ralph Adams Cram*.

*Dr. Haney* is prominent among art educators and is himself an artist. He has been a teacher, lecturer and director of art in New York since 1888. Since 1907 he has been head of the art department of the New York University summer school.

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## Arnold Unbleached Paper

## Buffine Drawing Paper

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27 x 40

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**KENSINGTON** is a white paper, made of linen rags, especially adapted for Manual Training Students; extra heavy weight and will stand much ink erasing. The **quality** of this paper will bring the results you have been looking for. **Kensington Paper** comes in the following sizes:

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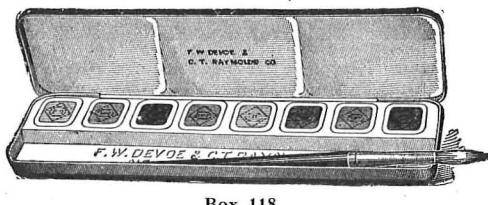
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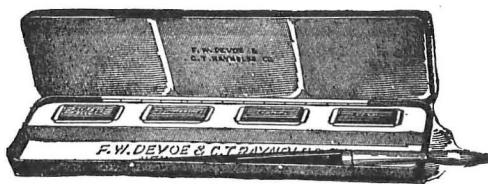
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## NEWS OF THE MANUFACTURERS

## MATTISON MACHINE WORKS MOVES.

The Mattison Machine Works has removed its main offices from Beloit, Wis., to Rockford, Ill. The removal involves no change in the personnel of the firm, or in its policies. It will continue to manufacture the same types of high-grade woodworking machinery and will give special attention to school requirements as in the past. The new location will, however, make possible more speed in the handling of orders and in shipping because of the favorable rail and mail connections which Rockford enjoys.

## ISSUE SHEET METAL CATALOG.

Berger Brothers, Philadelphia, have recently issued a new catalog and net price list of materials and tools used by sheet-metal workers, especially tinsmiths and copper-smiths. The catalog is of especial value to teachers of sheet metal work in trade schools, continuation schools and high schools because of its unusual completeness and because of the high quality of the goods included in the Berger line.

While it is easy for the average school to buy ordinary tin plate, and some of the most common tools of the sheet metal worker, the fittings and the other special articles which are necessary are extremely difficult to obtain because they are not carried in stock by the average wholesaler in hardware.

Berger Brothers Company has specialized for many years in the manufacture and sale of such articles as gutter hangers, pipe fasteners, kettle and tub ears, handles, buckets, knobs, tinnings' rings, can screws, roses, dampers and a thousand-and-one other items that are beyond the ability of the average shop to manufacture.

Any reader of the *Industrial-Arts Magazine* may obtain copies of the Berger catalogs by addressing the firm at 229 Arch St., Philadelphia.

## ANNOUNCES CHANGE.

Clarence Periolat, who was for many years connected with the school department of the Orr & Lockett Hardware Company and who of late has been selling schools under the title of "The Ruperlin Sales Co.," now announces that after October 1st, he will have full charge of the new school department which is now being opened in connection with Periolat Brothers, of Chicago.

Periolat Brothers is a well established wholesale and retail hardware and tool firm, which is now very much pleased to add to its present service a complete and effective school department.

School authorities who have not had catalogs from the firm recently are urged to write today to Periolat Brothers, 331 W. Madison Street, Chicago, Ill.

Mr. Donald L. Robey, of Weiser, Ida., is now in the Mechanical Training Division at Moscow, Ida., as an assistant instructor in general mechanics.

Mr. J. H. Daniels, of Clear Ridges, Pa., has accepted a position at Donora, Pa.

Mr. F. R. Cauch has been appointed Director of Boys' Vocational Work for the public schools of Oakland, Cal. Mr. Cauch is charged with the responsibility of developing the organization of the Oakland schools for vocational purposes and establishing curriculums for the same.

Mr. Nicholas Ricciardi has been appointed Director of Vocational Guidance and Attendance Bureau at Oakland, Cal. He has been engaged in full time work as head of this department.

Miss May Sellander has been appointed Acting Director of Drawing in the public schools of Oakland, Cal.

The Stuyvesant Evening Trade School of New York City is offering for the fall and winter months, free courses in typography, proofreading, copy editing, estimating and management. The classes are open to compositors, linotype and monotype operators, proofreaders, advertising and editorial workers, and men and women in allied lines. The courses are conducted under the direction of Mr. Arnold Levitas.

The College of the City of New York for the present winter is offering four special courses of evening instruction in typography, proofreading, copy editing, cost finding and administration. The classes are open to advertising and editorial workers, printers and other workers who wish to prepare for higher grades of work.

Santa Barbara, Cal. Polytechnic courses for boys and girls of high and grammar schools have been established in the Jefferson School. Iron and electrical work are offered to boys and housekeeping to girls. Students 14 years of age are eligible to the classes.

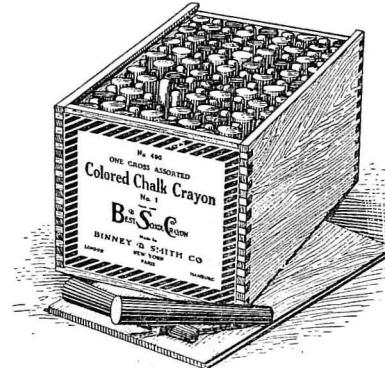


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# Industrial Art Text Books

By BONNIE E. SNOW and HUGO B. FROEHLICH

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The "Industrial Art Text Books" will help to make American boys and girls the most efficient men and women in the world. They will help America to win "the war after the war." Why not add the name of your town to this "Honor List?"

*Send for the last issue of "The Prang Bulletin" containing a full discussion of the Industrial Art movement.*

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